WESTERN EDITION
JUNE • 1955

American Fruit Grower

· IRRIGATION ISSUE ·

SAVE On Truck Tire Costs with the Firestone TRANSPORT B-112 HEAVY DUTY

HERE's a heavy duty truck tire you can buy at a very low price . . . a high quality truck tire which, dollar for dollar, gives you more for your money.

The Firestone Transport B-112 gives outstanding performance on paved highways or on gravel roads, and it gives the extra strength you need for hauling big loads in fields and orchards. The deeper and thicker tread of the Transport B-112 resists cuts and snags and it insures longer, low-cost, trouble-free mileage.

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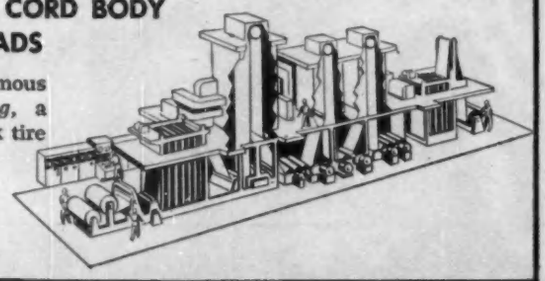
* T.M. Reg. U. S. Pat. Off.



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Antibiotics Now Offer Superior Blight Control

STREPTOMYCIN IS THE UNSURPASSED ANTIBIOTIC

AGRI-STREP,* the new, high potency, bacterial blight control spray, contains streptomycin. Extensive field tests have proved streptomycin to be the most potent, most stable, and most effective antibiotic for controlling certain bacterial plant diseases. That's why more than a dozen state experiment stations in all major producing areas are recommending its use this year.

In many tests, orchards sprayed with AGRI-STREP needed less than one blight cut for any two to three trees, while unsprayed trees required ten or more cuts a tree.

This is *big* money-making news for orchardists who grow apples, pears, or walnuts. For *now* you can boost market quality and prevent yield losses from fire blight in apples and pears—and blight in walnuts—by putting AGRI-STREP in your orchard blight control program.

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- **PEPPERS**—Bacterial Spot
- **POTATOES**—Soft Rot and Black Leg
- **TOBACCO**—Wild Fire and Blue Mold

For details, consult your county extension agent or state experiment station.

Merck agricultural streptomycin is easy to use and readily available. It is sold as ORTHO STREPTOMYCIN by California Spray-Chemical Corp., Richmond, Calif., or Washington, D. C.; and as AGRI-STREP by Niagara Chemical Division, Food Machinery and Chemical Corp., Middleport, N.Y. Contact their local representative or dealer.

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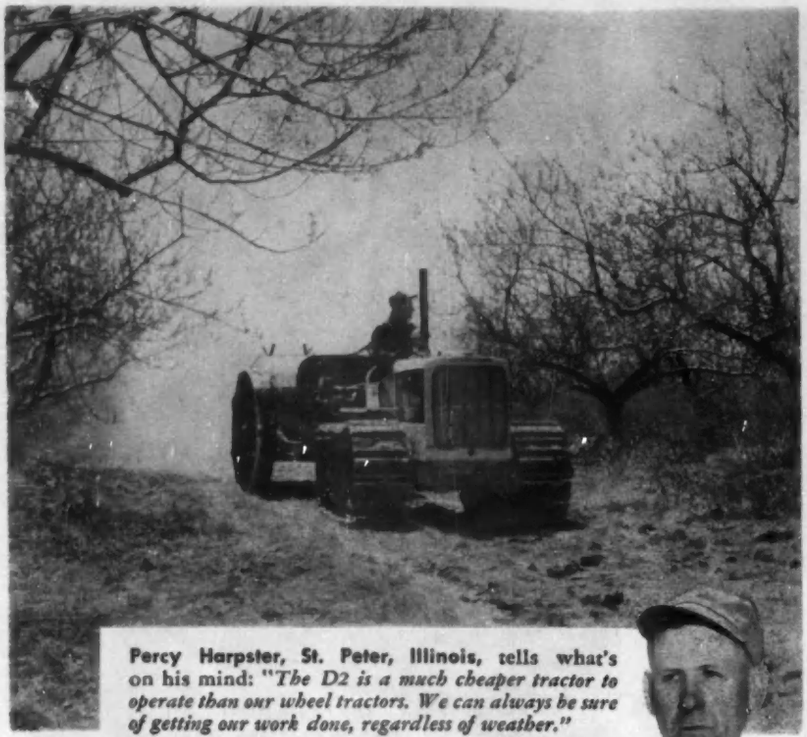

Percy Harpster, St. Peter, Illinois, tells what's on his mind: *"The D2 is a much cheaper tractor to operate than our wheel tractors. We can always be sure of getting our work done, regardless of weather."*

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This all adds up to the extra bonuses that come from being a Caterpillar owner: greater profits . . . greater security . . . greater peace of mind. Want these bonuses? Call your nearest Caterpillar Dealer. *Name the date . . . he'll demonstrate!*

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American Fruit Grower

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The Only National Fruit Publication

Vol. 75 JUNE, 1955 No. 6

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AMERICAN FRUIT GROWER

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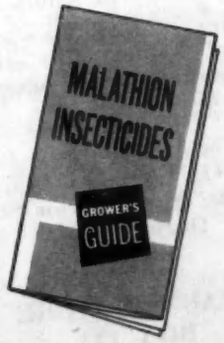
6. Dad uses malathion in our garden, too.

That's why we use malathion. Matter of fact, most of the farmers we know use it, too.

For complete, up-to-date information on malathion write for free booklet. Lists crops, insects controlled, dosages. Consult your county agent or other agricultural authority on application procedures and timing of sprays.

Malathion insecticides are available from well-known manufacturers, under their own trade names, in wettable powder, emulsifiable liquid and dust forms.



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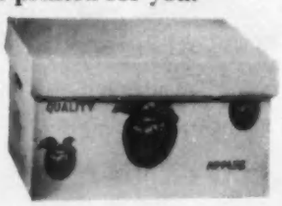
These sturdy extra heavy corrugated Boxkets pack like a basket, use present owned equipment, and produce an undisturbed bulge face pack. They eliminate cushions, caps, labels and also rim cut and stave cut of fruit. When you tear off the perforated liner top you have a perfect bulge face pack. The Boxkets, in bushel and ½ bushel cost less, save storage space and stack and truck well. They are available in color and can be special printed for you.



Jumble Pack Bu.

Many large operators also like these jumble pack boxes that come in bushel and ½ bushel sizes. They are sturdy, attractive and easy to handle.

Inquire about Boxes for Bagged Apples. Also ask for information on our berry and grape boxes.

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LETTERS TO THE EDITOR

Frost Protection

Dear Editor:

In the recent bad freeze of May 9, when the temperature dropped to as low as 22°, the only thing that saved the fruit was some artificial heat.

Gaylord Beck & Sons, of St. Johns, Clinton County, Mich., with about 100 acres of apples and cherries, successfully protected their crop, just past full bloom, with 6 tons of old automobile tires. They saved their cherry crop with this method last year also.

They got the load of tires in the afternoon and distributed them as much as possible through the orchard. The tires must be kept free from water, which can be done by piling one on top of another and fitting a piece of roofing or metal over the top. These could be kept ready in the orchard at all times and would be a good way to dispose of them. The Beck's paid about $5 per ton. This put a cash value on these old tires, which in small lots often can be obtained free.

The tires were easily ignited with a little kerosene, and the Becks state that by watching the wind and temperature drop the release of heat can be timed quite accurately to be most effective. The simplicity and economy of this novel system places an entirely new aspect on the problem of frost control in the orchard at blossomtime.

However, great care must be taken that the fire does not get out of control, and that a permit to burn is obtained.

St. Johns, Mich. Robert D. Ward

Thomas Black Walnuts

Dear Editor:

I have just read the article on growing and selling tree nuts in the November issue of your magazine, which, by the way, we enjoy very much. The author of this article states the Thomas on his Pennsylvania farm is worthless since it does not fill. We have a Thomas and the nuts fill and ripen perfectly. We are cracking Thomas nuts now.

I certainly wish I could find a nut cracking machine. The only machine known to me is a hammer and a piece of concrete.

My home is at Lewiston, Idaho, where the largest sawmill in the United States is located. The elevation is about 700 feet, the lowest spot in Idaho.

Lewiston, Idaho Calvin Hazelbaker

We enjoyed hearing about Reader Hazelbaker's success with Thomas black nuts. For a small nut cracking machine we advise him to try Benn Thompson, Harrisonburg, Va.—Ed.

Enjoy Small Fruits Issue

Dear Editor:

Just a note to tell you how much I enjoyed the April issue of AMERICAN FRUIT GROWER, which was almost entirely devoted to small fruits. This issue contains a vast amount of valuable information for the small fruit grower.

Was also glad to see the nice cover picture of cultivated blueberries.

Stanley Johnston
South Haven Experiment Station
South Haven, Mich.

Dear Editor:

I enjoyed the many fine articles on small fruit so much that I would like four more copies of the April issue to send to some of my friends back east.

Columbia Station, Ohio John Molloy

Requests Dusting Articles

Dear Editor:

I have been a subscriber and a reader of AMERICAN FRUIT GROWER for a number of years. In all this time I have never seen any article on a complete dust program. Why?

I have used a dust program on apples for four years; 1955 will be my fifth. Scab has been 99 per cent under control. Worms, leaf rollers and curcuio have been 98 per cent under control. Labor costs have been much lower, and time spent dusting much less than spraying. I would be glad to see some articles on dusting from ground equipment or air. I use a fish tail duster ground equipment and produce from 15,000 to 20,000 bushels of apples.

I would like to see both sides of this problem discussed in AMERICAN FRUIT GROWER.

Metamora, Mich. Thomas J. VanHorn

New Sport of Fireside

Dear Editor:

Under separate cover I am sending you a sample of our new red sport of Fireside. This sample was picked last fall and has not been in cold storage. The fruit this year tends to be large in size and under normal in color. The tree was heavily fertilized, which perhaps accounts for it.

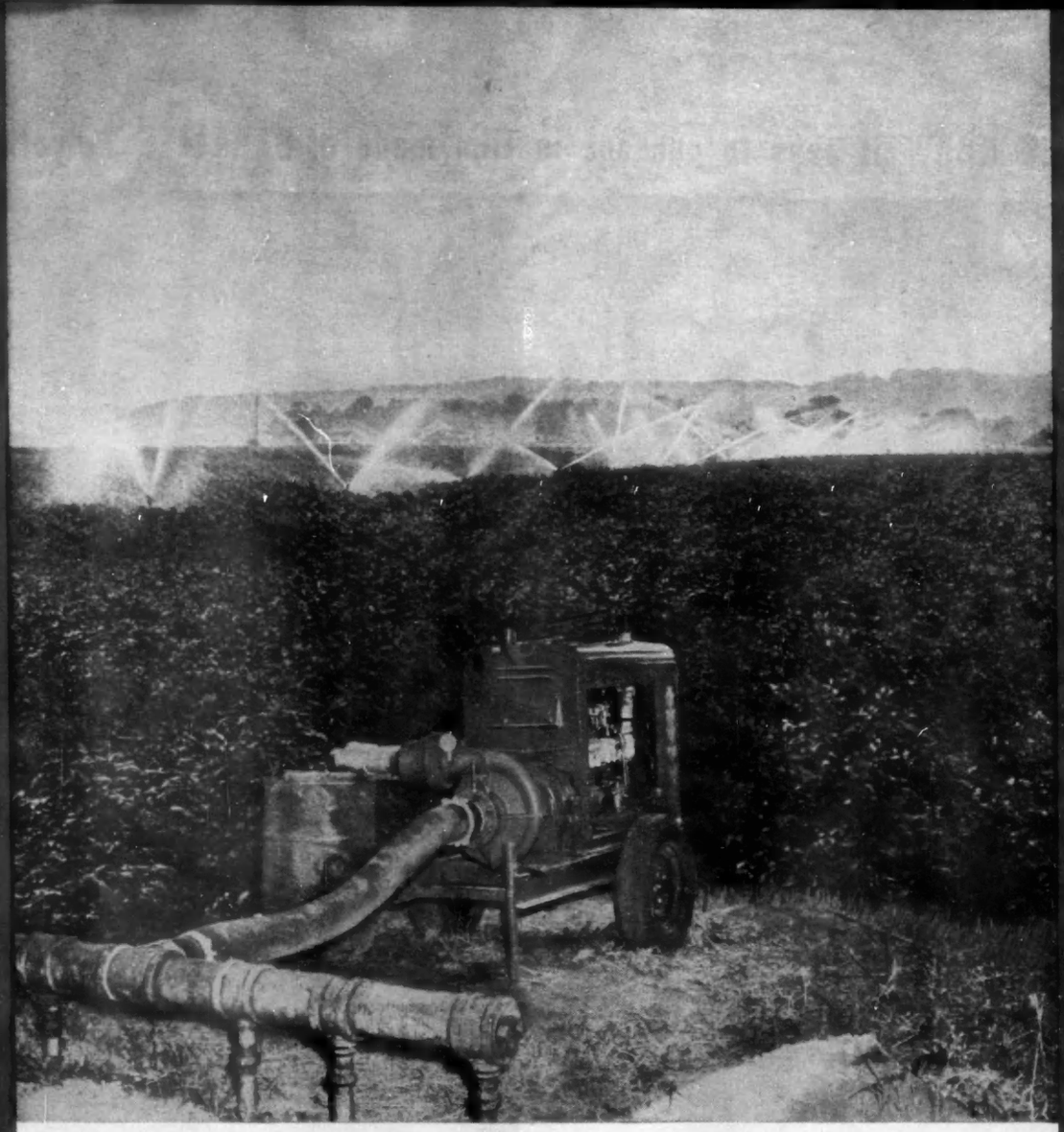
Apples from the 1953 crop were taken from cold storage on September 29, 1954, and were tested at the University of Minnesota. The pressure test showed a firmness of from 11 to 20 pounds.

On November 6 of this year an exhibition of five 13-month-old apples of this variety was greeted with considerable curiosity at the annual Wisconsin-Minnesota Fruit Growers meeting at Winona, Minn.

Menomonie, Wis. William F. Connell

As you can see in the accompanying photo, the Connell Fireside sport is "all apple." Large and with a deep red color, it drew exclamations of delight from all who saw it. The flesh is crisp and the flavor sprightly.—Ed.

The new red sport of Fireside



OVER 400 BUSHELS OF POTATOES PER ACRE—that's the record set by practically every truck farm last year in Suffolk County, Long Island, during one of the worst droughts in history of the area. Portable sprinkler irrigation was the answer to double the normal yield. With a Marlow Centrifugal Pump as the heart of the system, operating at high efficiency and at low cost, both fields and crops were kept *green and productive throughout the entire growing season.*

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Packages were made of VISQUEEN "C" film of **The Visking Corp.** by **Pacific Waxed Paper Co.**, Seattle 4, Wash.

"Good experience for apples encouraged us to try it on apricots and plums"

That's the case history of Herb Frank and Paul Lancaster, Yakima, Wash., fruit growers and warehousers. Here's what they have to say:

"Polyethylene is a wonderful material for packaging. Our good experience with it for apples encouraged us to try it on apricots and plums. Although in 1954 we shipped only part carloads in polyethylene bags on a trial basis, we are confident that *there will be an increased movement of soft fruit in polyethylene bags* in 1955." The picture, taken after their crops were marketed, shows the type of bags used.

This is another example of how one success leads to another . . . why more quantity and kinds of fruit and produce are being packaged in film made of BAKELITE Brand Polyethylene. You will find the same advantages . . . strength for easy filling and protection, excellent printability for brand identification right to the consumer, and freshness of product that can lead to premium prices. See your local packaging supplier for all the facts or for a free informative booklet, write Dept. GJ-67.

DID YOU KNOW: Pipe made of BAKELITE Polyethylene provides a new, easy, low-cost way to the finest farm water system. Pipe is easy to install with simple tools.

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- Phygon Spray Powder

For Curculio:

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- Genithion* P-15 Spray Powder (15% Parathion)
- Lead Arsenate: Standard and Astringent
- 50% Dieldrin Spray Powder
- Dieldrin EM-1½ Emulsifiable Concentrate (1½ lbs. Dieldrin per gallon)

For Codling Moth:

- Genitox* S-50 and S-75 (50% and 75% DDT) Spray Powders
- Lead Arsenate: Standard and Astringent
- Genithion P-15 Spray Powder (15% Parathion)
- 50% Malathion Emulsifiable Concentrate
- 25% Malathion Spray Powder

For Mites:

- 50% Ovex Spray Powder
- 15% Aramite Spray Powder
- Genithion P-15 Spray Powder
- 40% TEPP Liquid Concentrate
- 25% Malathion Spray Powder
- 50% Malathion Emulsifiable Concentrate

For Aphids:

- Genithion P-15 Spray Powder
- 40% Nicotine Sulfate
- 25% Malathion Spray Powder
- 50% Malathion Emulsifiable Concentrate
- 40% TEPP Liquid Concentrate

For Red-banded Leaf Roller:

- 25% TDE Emulsifiable Concentrate
- 50% TDE Spray Powder
- Genithion P-15 Spray Powder (15% Parathion)

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MODEL	ENG. MODEL	ENG. MFGR.	RECOMMENDED CAPACITY AND PRESSURE RANGE
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63A-G	3 inch Pump		Range varies with R. P. M.
64A-G	4 inch Pump		and H. P. of Tractor
Gasoline Engine Driven			
6201	23FB	B. & S.	80 gpm @ 80 lbs. - 175 gpm @ 40 lbs.
6301	23FB	B. & S.	135 gpm @ 50 lbs. - 315 gpm @ 20 lbs.
53M-TFD	TFD	Wisc.	140 gpm @ 70 lbs. - 300 gpm @ 35 lbs.
53H-VF4D	VF4D	Wisc.	225 gpm @ 85 lbs. - 400 gpm @ 40 lbs.
54A-VG4D	VG4D	Wisc.	225 gpm @ 95 lbs. - 550 gpm @ 50 lbs.
54M-134	CJ3A	Willys	250 gpm @ 120 lbs. - 600 gpm @ 55 lbs.
54M-CJ3A	CJ3A	Willys	250 gpm @ 105 lbs. - 600 gpm @ 55 lbs.
54B-6FB	6FB	Willys	325 gpm @ 120 lbs. - 800 gpm @ 50 lbs.
55A-265	IND-32	Chrysler	500 gpm @ 155 lbs. - 950 gpm @ 75 lbs.
55A-IND32	IND-32	Chrysler	500 gpm @ 150 lbs. - 925 gpm @ 75 lbs.
55M-IND24A	IND24A	Chrysler	600 gpm @ 160 lbs. - 1350 gpm @ 70 lbs.
55H-TDXC	TDXC	Herc.	800 gpm @ 160 lbs. - 1400 gpm @ 80 lbs.
610L	D-201	LeRoi	1250 gpm @ 45 ft. - 3500 gpm @ 22 ft.
612L	TDXC	Herc.	2250 gpm @ 60 ft. - 5250 gpm @ 22 ft.
Diesel Engine Driven			
55A	188D	Oliver	350 gpm @ 85 lbs. - 850 gpm @ 45 lbs.
55M	199D	Oliver	450 gpm @ 85 lbs. - 1100 gpm @ 65 lbs.
54A	DIX6D	Herc.	475 gpm @ 127 lbs. - 975 gpm @ 60 lbs.
55H	3031	G. M.	550 gpm @ 110 lbs. - 1300 gpm @ 60 lbs.
55H	4031	G. M.	550 gpm @ 110 lbs. - 1400 gpm @ 75 lbs.
55T	2031	G. M.	350 gpm @ 120 lbs. - 725 gpm @ 60 lbs.
55T	UD9A	Int. Harv.	325 gpm @ 135 lbs. - 825 gpm @ 75 lbs.
55T	DIX6D	Herc.	350 gpm @ 165 lbs. - 825 gpm @ 65 lbs.
55T	3031	G. M.	300 gpm @ 155 lbs. - 825 gpm @ 80 lbs.
55T	UD16A	Int. Harv.	300 gpm @ 165 lbs. - 900 gpm @ 80 lbs.
55T	4031	G. M.	300 gpm @ 165 lbs. - 900 gpm @ 95 lbs.
55T	188D	Oliver	250 gpm @ 105 lbs. - 700 gpm @ 45 lbs.
55T	199D	Oliver	250 gpm @ 140 lbs. - 750 gpm @ 75 lbs.
610L	UD-6A	Int. Harv.	1250 gpm @ 55 ft. - 3750 gpm @ 21 ft.
612L	UD-18A	Int. Harv.	2500 gpm @ 65 ft. - 6000 gpm @ 25 ft.

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Irrigation Acreage Estimate ..... Acres

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American Fruit Grower

Your FRUIT TREE ... AND WATER

By JOHN R. MAGNESS
U. S. Department of Agriculture

- **One mature apple tree uses 60 to 125 gallons of water in one summer day**
- **Drying out of any portion of root zone decreases rate of fruit growth**

THERE are many things about water and plant relations that still are not fully understood. Some of the basic information we have, however, particularly with reference to fruit trees, will give the grower a clearer understanding of the water needs of his trees.

First, let us consider how much water soils will hold and how much of that water plants can take up through their roots. The amount of water a soil will hold when it is wet from rain or irrigation and the free water has drained away is termed its field capacity. This varies with the texture of the soil. Field capacity of a coarse sand may be only 4 or 5 per cent by weight, of a fine sand 8 to 12 per cent, of a silt loam 14 to 18 per cent, and of clays 20 to more than 30 per cent.

In most soils about *half* the water they will hold is available for plant use—generally well over half that in coarser type soils and a little less than half that in fine-textured soils. The amount of water left in soil when plant roots can no longer take it from the soil is termed the wilting percentage—the amount of water in soil when plants wilt permanently.

Six per cent of moisture in a foot of soil depth is 1 inch of water. From the previous statements we can see that per foot of depth a fairly coarse sand may hold about ½ inch of water available for plants. A silt loam will hold 1 to 1½ inches per foot of depth, while a clay may hold as much as 2 inches. Clays are often so poorly aerated, however, that roots do not grow into them freely. At times clays may be waterlogged and roots in them die. Hence they often are not satisfactory for crop trees even though they do store a large amount of available water.

The tree roots can apparently take water from the soil at nearly a uniform rate so long as the soil in contact with the root contains moisture above the wilting percentage. Thus if *all* the soil in the root zone is above the wilting percentage in moisture content, the plant can take up water at nearly the maximum rate.

However, soil does not dry down uniformly, particularly under fruit or other trees. After the soil is wet, by either rain or irrigation, water is withdrawn fastest where fine roots are thickest in the soil. For orchard trees this is usually in the top foot of soil and under the branches. Water is withdrawn more slowly farther from the trunk and deeper in the soil, where roots are fewer and more widely dispersed.

Once a part of the root zone reaches the wilting percentage, roots in that zone can no longer take up water and the total water intake of the tree is reduced. If the weather is hot and dry, fruit growth rate will begin to decrease when any substantial part of the root zone reaches this wilting percentage.

What happens when trees do not

(*Continued on page 32*)

Apple orchard at 1,700-acre Ontelaunee Orchards, Leesport, Pa. Schuylkill River passes orchard at two points.

ONTELAUNEE'S

At Pennsylvania's big Ontelaunee Orchards . . . irrigation was scheduled strictly for the berries until they saw what it did for the peaches!

By R. T. MEISTER
Editor

BIG discoveries are often the results of accidents. Melvin Hoffman, enterprising orchard manager at big Ontelaunee Orchards in southeastern Pennsylvania, places his discovery of the possibilities of irrigation in this category.

In the spring of 1953, Ontelaunee Orchards decided to add 7 acres of strawberries and black raspberries to the already-varied operations on their 1,700-acre farm. These included 400 acres of bearing apple trees; 275 acres of non-bearing apples, including a 50-acre orchard of dwarf trees; 200 acres of peaches; 10 of sweet cherries; 4 of pears; and 2 of plums.

Always first with the latest, they had built a 65,000-bushel capacity cold storage and packing house in 1948. They even have a deer lodge for their 22 full-time, year-round employees.

This sort of progressive thinking had led them to "think about" irrigation, but it had never seemed necessary. The Schuylkill River Valley was not generally a drought area. When they decided to add berries, however, they realized that irrigation would be necessary to make berries pay.

So, early in August, 1953, they began digging a pond to prepare in an experimental way for irrigation. When half-finished, early peach harvest came along, and the men were pulled off the job.

"We went back a week or two later to find the bottom of the pond-hole covered with water," says Hoffman. "The water had to be pumped out to allow further digging. We decided to pump it into a half-acre orchard about 600 feet from the pond. At harvesttime, those peaches were *double in size!* This opened our eyes fast to irrigation."

Following this "happy accident," an irrigation expert, Lewis W. Barton, Haddonfield, N.J., was called in. Barton made a survey of the water possibilities.

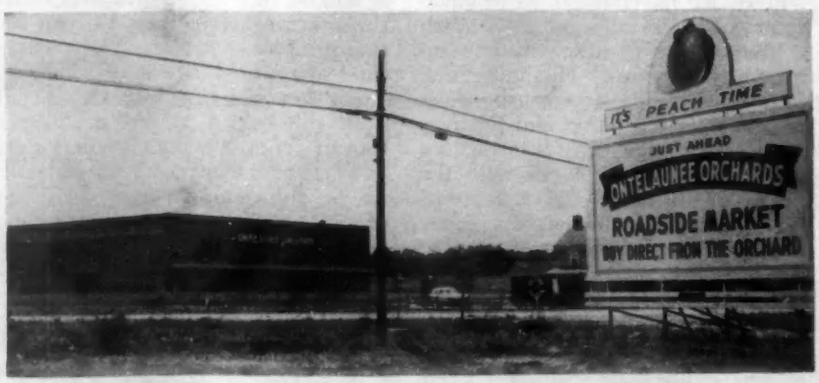
The Schuylkill River, which passes the orchard at two points, would furnish enough water to irrigate 65 to 70 acres of apples.

The farm pond is rated at 2¼ million gallons when full. To get more water, they bought a 140-acre farm near-by, on which was a mud-filled, broken-down power dam. This dam was repaired, and now furnishes 3 million gallons. Water from the dam and the farm pond furnish irrigation for 70 acres of peaches.

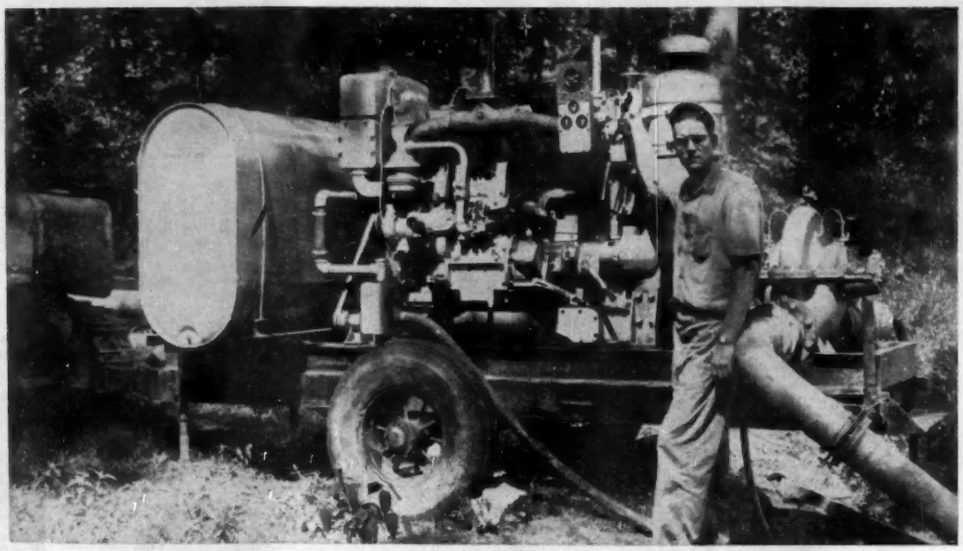
Future plans call for deepening the storage pond and constructing another pond to give a storage capacity of 15 million gallons, which would serve 315 acres of apples and peaches.

Ontelaunee also has an agreement with the city of Reading, 9 miles away, to purchase 15 million gallons of water for irrigation purposes.

The system consists of a Gorman-

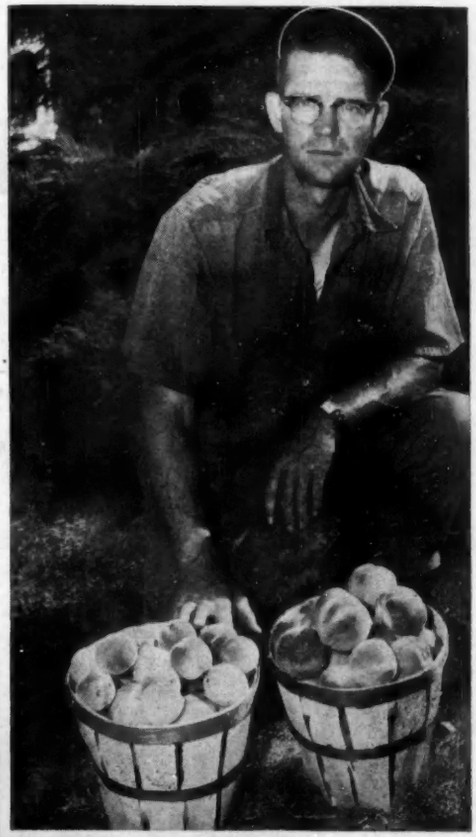


Roadside market is located 9 miles north of Reading on Route 122. Built in 1948, modern cold storage-packing house holds 165,000 bushels.



Orchard manager Melvin Hoffman with Gorman-Rupp® #701 pump (Gorman-Rupp Co., Mansfield, Ohio). Pump is driven by Caterpillar D-326 diesel engine mounted on Speed sprayer frame.

Happy Accident



Rupp No. 701 pump, driven by a Caterpillar D-326 diesel engine of 126 hp. At 35 pounds pressure, this pump delivers 1200 gpm (gallons per minute). Since there's a 190-foot elevation from the pump to the top of the peach and apple orchards, however, they usually get 800 gpm.

This year they'll be using 1¾ miles of irrigation pipe, made by Ireco, Alcoa, and Flex-O-Seal. In 1954 they used 1,700 feet of 8-inch, 2,400 feet of 6-inch, 2,200 feet of 5-inch, 2,900 feet of 4-inch, and 1,800 feet of 3-inch pipe.

Sprinklers are Buckner Model 211 with 7° low-angle tips and a discharge capacity of 10½ gpm. They had 130 in operation last year. Hoffman says the low-angle sprinklers were chosen to keep scab from spreading throughout the apple orchards.

"We use them on the peaches too," he says, "because we have them." He admits that high-angle sprinklers would be better on peaches, since they'd cover more area, but he doesn't feel this advantage justifies the extra cost.

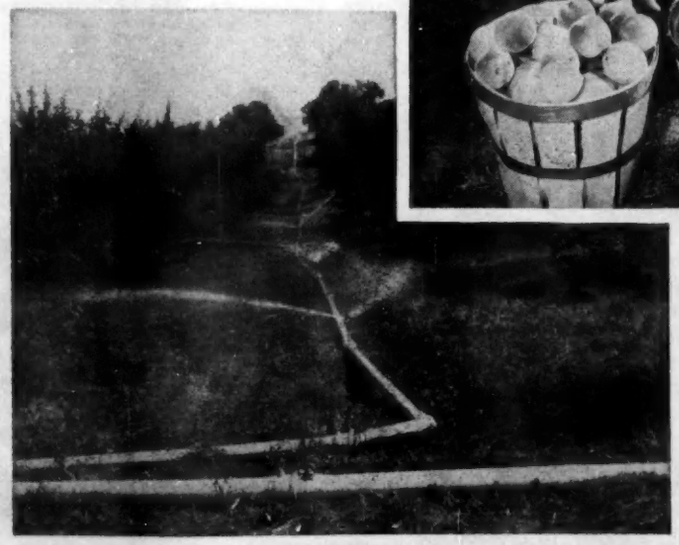
Apples include three main varieties: Rome, Red Delicious, and Golden Delicious. Soil is shale, gravel, and limestone. New orchards are planted on a modified contour, old orchards are the regular 40x40. Apples are given 2 to 4 inches of water, depending on maturity of crop, age of trees, and variety.

In 1954 they irrigated the early peaches, which included all varieties up to Elberta. This was approximately 72 acres, of which 56 were bearing. The non-bearing 16 acres received only enough water to save the trees in the mid-summer drought.

Irrigation of peaches is begun about 3 weeks before harvest, and they try to apply between 2 and 3 inches of water. The peach orchard is on shale, so they've been thinning 8 to 10 inches. With irrigation, Hoffman feels, they hope to cut thinning to 6 to 8 inches. Once they have sufficient water, he feels 6 inches will be enough to produce peaches 2¼ inches and up.

Before irrigation, the heavy thinning to get peaches of 2¼-inch size

(*Continued on page* 33)



Irrigation added a half-inch to size of peaches and doubled yield. Last year 85 per cent of peaches were 2¼-inch size, with most 2½inches. Yield was 3.2 bushels per tree. Irrigation water is pumped through 1¾ miles of pipes (Ireco, Flex-O-Seal, and Alcoa). Low-angle Buckner sprinklers are used.

Cecil Clark recently added to his extensive fruit acreage by setting out trees on this worthless 10-acre tract. Through careful fertilization, mulching, and irrigation practices he expects to have a full bearing orchard within the decade.

Cecil Clark keeps his irrigation system in tip-top shape. He is shown cleaning one of the nozzles located in one of his older orchard tracts.

NO MORE DITCHES
in Cecil Clark's Orchards

Prominent Washington grower uses sprinklers instead and saves money on cultural operations

By JACK WHITNALL

CECIL CLARK, of the Lombard Loop district near Wapato, Wash., is a man who practices both farming and politicking with somewhat of a gusto, showing that he enjoys doing both. But while he's still somewhat of a tyro at politicking, having spent only a year or so in the Washington state legislature, he's been farming since 1922.

Mr. Clark, by anybody's standards, is a progressive farmer. He's been progressing ever since he borrowed $750 in 1922 and bought 45 acres of peaches, apples, and pears, a tract which now forms the nucleus of his 260-acre farm.

During the 20's, Mr. Clark made money and bought land. In the 30's, he lost money and lost land, and kept only his original 45 acres. "I'd have sold that if I could have found a buyer," Mr. Clark remarked.

In 1939, however, Mr. Clark began to feel a bit more prosperous. He bought a tractor-drawn Hardie spray rig, hitched up a motor to replace the drawbar drive, and put three of his old-time employees on a profit-sharing basis . . . small monthly salary and 50 per cent of the profits, a system which he and his three employees still use. By 1940, Mr. Clark felt that the depression was over, and also that a war was coming. He hocked everything he owned and bought 80 acres of orchard, 200 acres of sagebrush land, three tractors, tools, trailers, and other orchard equipment.

In 1935, Mr. Clark had experimented with sprinklers. He had devised a sprinkler system composed of common garden hose and sprinklers, and he had five acres under sprinklers. He began adding more sprinklers in 1940.

(*Continued on page* 41)

Tree holes in 10-acre tract were dug with augur. Cecil Clark directed operation while Don Clark operated augur. Holes were drilled 10 to 18 inches deep, depending upon root length of young trees. Irrigation pipe shown was placed in the new orchard.

State NEWS

- **Washington Apple Growers Vote to Increase Advertising Budget**
- **Jack Frost Pays Unwelcome Visit to Many Michigan Orchards**

Four Cents a Box

WASHINGTON—By a vote of 3 to 1, growers in this state voted to increase their apple advertising assessment from 3 to 4 cents per box. This will increase the Washington State Apple Commission's average operating budget to $1 million a year.

"The increase simply means that we will do more advertising and field work in more cities over a longer period of the year," said Commission Manager Harold Copple.

The commission plans to emphasize the "dental health" approach in its advertising, which will be expanded in the East, South, Midwest, and northern California.

Hit by Freeze

MICHIGAN—On the night of May 8 temperatures dropped to as low as 24° F. in fruit sections reaching from South Haven to Traverse City. There was little to no wind with the result that the orchards on the less favorable locations were the most severely damaged. Fruit development was 10 to 14 days ahead of normal due to an unusually warm April.

Generally throughout the state small fruits, grapes, and strawberries were hardest hit. Tree fruits did not appear to be as badly injured as small fruits, but in some orchards peaches, plums, and pears are a complete loss.

Of apples, Red Delicious appears to show severest injury while McIntosh appears to be hurt the least. It is not possible to predict the extent of injury to cherries at this time.

It will be at least two weeks before the extent of the injury can be truly evaluated.—*Arthur E. Mitchell, Sec'y, East Lansing.*

Frost Damage

INDIANA—Damage to fruit in southern Indiana by the freeze of March 26-27 was serious. However, in checking orchards early in May, it was found that there are more apples left than first expected. The crop will be light, though.

Northeastern Indiana was hit by 27° temperatures on May 9, with heavy damage resulting in some orchards, where fruit turned black. It is too early to determine the amount of damage. Some large growers estimate only a fourth of the crop left, with considerable frost-marked fruit. — *Ray Klackle, Sec'y, West Lafayette.*

Blossomtime Tour

PENNSYLVANIA—Adams County orchards welcomed more than 25,000 tourists May 1 when the Adams County Fruit Growers Association held its first Blossomtime Tour in more than 20 years.

Tourists viewed a half-million apple trees in blossom along a 20-mile route. Apple juice stations and a smorgasbord dinner in Biglerville added to the enjoyment.

With a membership of some 300 growers representing 15,000 acres of applelands, the association plans to make Blossomtime an annual event. The group is now planning a Harvest Week End this fall, when they'll again hold "open house." Fremont Kuntz is president, Ralph Tyson is vice-president, and Billy Wilson serves as secretary-treasurer.—*Michaela S. Pyle, Publ. Chmn., Biglerville.*

FORECASTING APPLE PRICES

Progress is being made in Congress to eliminate the practice of USDA forecasting of apple prices. Various spokesmen of the apple industry testified recently before the House sub-committee on agriculture on HR 5188 introduced by Rep. Burr Harrison of Virginia.

Typical of the testimony is this statement by Carroll Miller, secretary-manager of Appalachian Apple Institute: "Predictions of future prices of perishable fruit such as apples can be accurate only by chance; too frequently such predictions are inaccurate, misleading, and injurious to growers; and do not benefit the public."

Miller pointed out that buyers frequently use USDA predictions in dealing with growers, and that such conditions as drought have upset USDA crop and price estimates at various times in the past.

Leaf Analysis

DELAWARE—A spectographic leaf analysis service will be offered to apple growers this year by the Delaware Agricultural Extension Service and the Delaware Apple Growers Association. The extension service will collect the leaves for sampling.

Peach and apple crops appear good.

Peach constriction seems to be on the wane where captan is used. T. G. Adams, Bridgeville, used it on a badly infected block with fair results.—*Robert F. Stevens, Sec'y, Newark.*

Fire Blight Sprays

IOWA—The fruit situation early in May

(*Continued on page* 21)

FRUIT PEST HANDBOOK

(FORTY-FOURTH OF A SERIES)

STRAWBERRY ROOT WEEVILS

ROOT WEEVILS are important insect pests of strawberries, cane berries, and many ornamental plants. Feeding injury of larvae on roots and crowns weakens or kills the plants. The old control method of "baiting" for adults was costly and inefficient. New control methods have been devised, primarily for strawberry producers, by entomology research workers at Oregon State College. These new methods include yearly surface insecticide applications on growing plants and the use of a soil insecticide before planting.

The legless larvae or "grubs" that do the damage range in size from one-eighth to three-eighths of an inch in length. They are white in color with brown heads and may be found, in a slightly curved position, among the roots of host plants. They overwinter in the larval stage and pupate in April.

Adults appear above ground in May and June in Oregon when they feed on the lower plant leaves, making semicircular holes in the edge of the foliage.

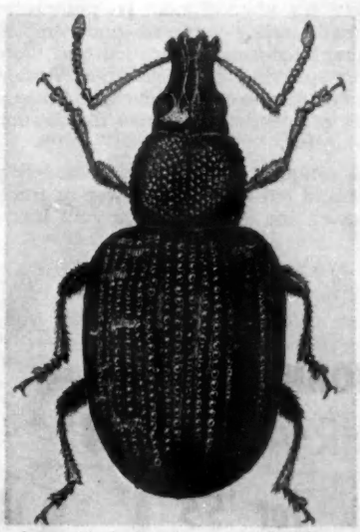
Weevils are black in color, about one-fourth to one-half inch long, and have a short broad "snout." They feed at night and hide beneath debris at the base of host plants during the day. Growers can determine if weevils are present by examining their plants at night with a light. Egg laying begins from four to six weeks after weevils appear.

Control After Planting. **The first method of control starts with application of 50 pounds of 4 per cent malathion dust to the growing plants in the field two weeks before harvest. Following harvest, 50 pounds of dieldrin, heptachlor, aldrin, or chlordane should be applied as a 5 per cent dust.**

Control Before Planting. **In the second control method an insecticide is mixed into the top 6 inches of soil before the plants are set out. Best control results were obtained with either heptachlor or dieldrin. (Aldrin or chlordane were less effective.) The amount of active insecticide to use is 5 pounds per acre for controlling the largest black weevil (strawberry weevil) and 10 pounds per acre for controlling the largest black weevil (black vine weevil).**

Applying Soil Insecticides. **An insecticide**

(Continued on page 29)



Large black strawberry weevil (black vine weevil), enlarged about five times.

Here are 4 of the 8 . . . the AIR-AGE 8

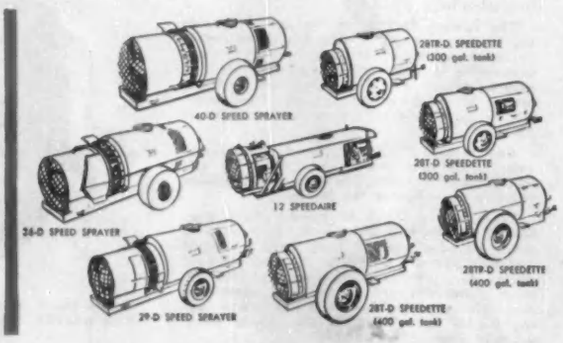
4 JOHN BEAN SPEEDETTES NOW BRING ECONOMICAL AIR SPRAYING TO EVERY MEDIUM SIZED ORCHARD

Owners of medium-size orchards or groves can save time, save labor and save spray materials with a proven John Bean Speedette air sprayer — and grow better fruit more profitably!

Spraying is a fast, one-man operation with a Speedette. You spray "on time" when it's needed most — put protection where you want it with accurate "zoned" spray patterns and simplified, easy operating controls. You get through-the-tree penetration and thorough top-to-bottom coverage that makes your spraying fully effective. And whether you spray concentrate or semi-concentrate to avoid run-off and drip, or spray dilute, your materials go further with a Speedette because distribution is uniform and particle size is closely controlled.

The range of four Speedette models provides either 300 or 400-gallon capacities and either engine power or tractor power take-off. See the Speedette of your choice in action. Ask your John Bean dealer for a demonstration.

the JOHN BEAN AIR-AGE 8 for '55



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John BEAN DIVISION OF FOOD MACHINERY and CHEMICAL CORP.

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THE QUESTION BOX

Don't be perplexed! Send us your questions—no matter how big or small. A three-cent stamp will bring you an early reply. Address: The Question Box, AMERICAN FRUIT GROWER, Willoughby, Ohio.

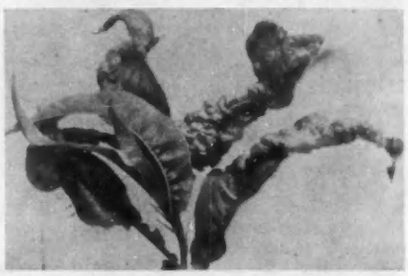
BLACK LEAF 253 COMPATIBILITY

Is Black Leaf 253 compatible with dieldrin, captan, EPN, and lime sulfur?—Ohio.

Black Leaf 253 is composed of DDT 25 per cent and parathion 3 per cent and is compatible with dieldrin, captan, and EPN. Be sure to use wettable powder forms with Black Leaf 253 since certain solvents and emulsifying agents used in preparation of liquid forms may change the compatibility. Use it with lime sulfur with caution. Although initial kill should be effective, residual action may be reduced when mixed with lime sulfur.

PEACH LEAF CURL

Attached is a photograph of a strange deformation which has affected some of my peach leaves. The trouble is scattered in various branches of the tree and healthy, normal leaves are seemingly unaffected although next to affected leaves. Some of the leaves are completely affected while on others only a portion of the leaf shows any disturbance. The trouble manifests itself by a swelling and a distortion of the leaf, making a most disagreeable sight.—Ohio



These are the characteristic symptoms of peach leaf curl in which the leaves become reddened in color and are curled and distorted. At the same time they increase in thickness and assume a cartilaginous consistency. The best control measure is to make one thorough application of lime sulfur, six and one-half gallons in 100 gallons of water or 6-6-100 Bordeaux mixture during the dormant period before the buds begin to swell. Once growth begins and the fungus has penetrated the young leaf tissues, spraying is of little avail and the disease must run its course for the season.

TREE GROWTH

Will a tree that made a poor start and is somewhat stunted ever fully recover and grow as vigorously as trees that started well?—Missouri.

A stunted tree is usually a snare and a delusion. This does not mean that an occasional stunted tree will not develop satisfactorily, but the general rule is that they do not.

Of course, if a tree is stunted because it is in the shade of a building or because there are some rapidly growing trees nearby, or because it is sitting on top of a rocky outcrop, then moving this tree someplace else will let it take over and develop properly. However, if a stunted tree appears in an orchard where such situations are not likely to occur, then it is more than likely that the reason is because it shows black heart from winter injury, because the union is poor, because the roots have been injured in storage and transplanting, or something else of that nature.

LET THEM GROW NATURALLY...

with CRAG Trade-Mark FRUIT FUNGICIDE 341

(A Glyodin Solution)

CRAG 341 is the mild fungicide that protects your crop from apple scab with an almost transparent residue. Your fruit develops naturally into a quality crop with high color and fine finish—a quality crop bringing quality prices.

You also get suppression of European Red Mites if you use CRAG 341 on a complete schedule. Many growers have gotten through the whole season without special red mite sprays—even when their neighbors have put on as many as five.

You can't go wrong if you use CRAG 341—it costs less than other organic materials—yet gives you more bushels of quality fruit—use it and see!

CRAG Trade-Mark

AGRICULTURAL CHEMICALS

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WADE RAIN gives bigger crops of better grade fruit right from the first year! Thorough penetration of the soil by WADE RAIN develops better root structure and healthier trees, throughout your orchard — reaches every tree! Get all of these *plus* advantages with WADE RAIN.

1. *Saves Expensive Manpower*
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FREE PLANNING SERVICE
. . . for the best possible Sprinkler Irrigation system for YOUR farm. "Farm-Facts" will help you start.

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→ FARMERS . . . Use Coupon for Illustrated Literature on Power-Moving of Laterals, including:
Revolutionay New
POWER-SHIFT Tractor Moves Complete Lateral . . . fast . . . stays out of crops!
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WATER CONTROL LEGISLATION

New Jersey law aims to avert shortage of irrigation water

By THURLOW C. NELSON
Rutgers University

NEW JERSEY, Garden State of the Union, is unique in combining with its agricultural needs for water extensive development of both surface and subsurface water for industrial and domestic use. Requirements of industry can be appreciated from the fact that between the Raritan River and Hudson River valleys lies the highest concentration of chemical and pharmaceutical plants in the entire world. Both require large quantities of water.

Prior to the drought of 1949 supplemental use of water for agriculture was not a problem in this state. With an annual average rainfall of 45 inches, usually well distributed at 3 to 4 inches per month over the year, there was little need for irrigation on the farm. In recent years, however, droughts during the growing season have been of longer duration, while rains have often fallen in shorter periods at higher intensity, resulting in more rapid runoff and less penetration of the soil. Added to this has been appreciable loss of recharge areas through the building of highways and hundreds of thousands of houses.

"Protected Area" Established

Recognizing that falling well levels in many parts of New Jersey were a clear warning of water shortages to come, the legislature in 1947 passed Chapter 375, a comprehensive law to give the Department of Conservation and Economic Development authority to establish a "protected area" wherever evidence from falling ground water levels indicated that diversion of subsurface or percolating waters were exceeding, or threatened to exceed, the natural recharge.

Once delineated, all diverters of ground water within the area are permitted to continue to withdraw the full capacity of the equipment in place on the date of delineation, but must file an affidavit as to such equipment and water use. Subsequently they must submit quarterly reports of water diversions. Old or new wells drawing less than 100,000 gallons daily, averaged over the maximum month, are exempted. No new well designed to withdraw more than 100,000 gallons daily may be drilled, and no increase may be made in wells of over 100,000 gallons capacity on the day of delineation, without public hearing and issuance of a permit.

First State to Enact Law

This law exempts most agricultural wells since they are less than 100,000 gallons daily capacity. It does, however, include wells designed for irrigation. Therefore, within its protected areas, New Jersey becomes the first state in the nation with legal control of ground water for irrigation.

With heavy draft upon subsurface waters for industrial use adjacent to farming areas, the wisdom of the coverage of this law is clearly apparent. The chief weaknesses of the law are: 1) the council may not take jurisdiction until evidence of depletion is clear and unmistakable; and 2) with most industries on an 8-hour, 5-day week schedule at delineation, increase to a 24-hour, 7-day week under war or other emergency would result in quadrupling the diversion of each diverter while still using equipment of the original capacity.

From present indications New Jersey farmers are satisfied with the operation of our 1947 law. Outside of the protected areas there are no restrictions, while within each such area every farmer knows that his requirements for water are recorded with a responsible state agency which will protect his investment. As of November, 1952, 25,000 acres in New Jersey were using supplemental irrigation, with increase to 65,000 acres by 1954.

As touching the use of surface water for irrigation in this state, however, the picture is very different. Diversions from streams by municipalities or companies for public water supply are rigidly controlled, but are unrestricted otherwise. As a result, upstream farmers have in the last two summers dried up small streams, leaving nothing for the needs of lower property owners. Herein lies a serious deficiency which must be promptly and adequately provided for by new legislation. THE END

Today's safest, best all-round

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better kill
cleaner fruit
better yields

ARAMITE®

Before mites bite, be ready with Aramite, the best and *best-known* mite killer. Protect your crops for higher yields of marketable fruit.

Aramite gives outstanding control of European Red Mite, Two-Spotted, Clover and many other mite species.

Long residual saves you costs of additional sprays. Aramite is easily applied, compatible with sulfur and many other insecticides and fungicides. Aramite does not kill natural predators.

Order your Aramite supply from your *local* supplier; write, phone or call us if he is unable to deliver.

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Division of United States Rubber Company
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producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.

Check these money-making advantages of a MYERS CONCENTRATE SPRAYER

"... don't need hired help for orchard spraying."

ALBERT MASON, Albion, New York

"... cut my spraying time in half."

G. G. HUDDLESTON, Troutville, Virginia

"...better fruit finish on apples and peaches."

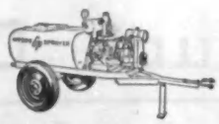
E. E. WLODARSKY, Berlin Heights, Ohio

A Myers Concentrate Sprayer is benefiting these and other important growers in two profit-making ways: (1) cuts operational costs; (2) helps produce premium-priced, quality yields.

Concentrate spraying requires just one-fourth the water needed for dilute methods—and fewer stops for water save spraying time. Control is better, too, because with low-water mixtures there's no runoff. Spray materials go further.

The high-velocity Myers Concentrate Sprayer assures even distribution of the spray mixture in small droplets over the entire tree. There is no undesirable spotting of the fruit from excessive spray deposits. Let your Myers dealer explain these and other features of the Concentrate Sprayer.

Myers Concentrate Orchard Sprayer



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CALENDAR OF COMING MEETINGS & EXHIBITS

June 8—Illinois State Horticultural Society summer Orchard day, Frank and Bob Chatten Farms, Quincy.—Harold J. Hartley, Sec'y, Carbondale.

June 8-9—Florida Citrus and Sub-Tropical Fruits Institute, Camp Francis, Lake Placid, Fla. Conducted by Florida Agricultural Extension Service, Gainesville.

June 13-15—South Dakota State Horticultural Society annual meeting in joint convention with State Federation of Garden Clubs, Watertown.—W. A. Simmons, Sec'y, Sioux Falls.

June 16—Small Fruits Day, Ohio Agricultural Experiment Station, Wooster.—C. W. Ellenwood, Sec'y, OSHS, Wooster.

June 16-20—National Apple Institute annual convention, Mark Hopkins Hotel, San Francisco, Calif.—Truman Nold, Sec'y, 726 Jackson Pl., Washington 6, D. C.

June 20—University of Massachusetts annual strawberry twilight meeting, Amherst.—A. P. French, Pomology Dept., Amherst.

June 28—Ohio Apple Institute, 18th annual meeting, Lynd Brothers Orchards, Pataskala. Howard M. Wells, Mgr., McArthur.

July 12-13—Texas Pecan Growers Association annual convention, Blackstone Hotel, Tyler.—A. H. Krezdorn, Sec'y, College Station.

July 14—Indiana Horticultural Society annual summer meeting, Purdue University O'Neall Horticultural Farm, Lafayette.—Ray Klackle, Sec'y, West Lafayette.

July 20—University of Connecticut 5th annual machinery, equipment, and supplies field day, Storrs.—Arthur C. Bobb, Ext. Fruit Spec., Storrs.

July 21—Massachusetts Fruit Growers Association summer meeting, at home of President Elmer Fitzgerald, Leominster.—A. P. French, Sec'y, Amherst.

July 26-27—Four-state joint summer meeting, (Md., Va., W. Va., Pa.) including tour of Ontelaunee Orchards, Leesport, and Trexler Orchards, Boyertown, Pa. Host: State Horticultural Association of Pa.—John U. Ruef, Sec'y, University Park, Pa.

July 27—V.P.I. Department of Horticulture field day, Blacksburg.—W. P. Judkins, Dept. of Hort., Blacksburg, Va.

Aug. 1-3—United Fresh Fruit and Vegetable Association 7th annual merchandising conference, Conrad Hilton Hotel, Chicago. Association headquarters 777 14th St., N. W., Washington 5, D. C.

Aug. 8-10—North Central Division of American Phytopathological Society summer meeting, Wooster, Ohio.—H. C. Young, Dept. of Botany & Plant Pathology, Ohio Exp. Sta., Wooster, Ohio.

Aug. 9-11—Ohio Pesticide Institute summer meeting and field tour, Wooster and various points in northern Ohio.—J. D. Wilson, Sec'y, Ohio Experiment Station, Wooster.

Aug. 12—Rhode Island Fruit Growers Association summer meeting, University of Rhode Island, Kingston. Mrs. Edgar A. Steere, Sec'y, Chepachet.

Aug. 15-18—International Apple Association annual meeting, Statler Hotel, Detroit, Mich. Fred W. Burrows, Exec. V. P., 1302 18th St., N.W., Washington 6, D. C.

Aug. 15-19—Florida Citrus Institute, Camp McQuarrie.

Aug. 16-20—Centennial of Farm Mechanization, Michigan State College, East Lansing.—A. W. Farrall, Head, Agr. Engr. Dept., MSC, East Lansing.

Aug. 17—Kansas State College horticultural field day, Horticultural Farm, Manhattan.—W. G. Amstein, Ext. Hort., Manhattan.

Aug. 18—Orchard Day, Ohio Experiment Station, Wooster.—C. W. Ellenwood, Sec'y, OSHS, Wooster.

Aug. 29-Sept. 6—International Horticultural Congress 14th annual meeting, Scheveningen, Netherlands.—Dr. G. de Bakker, Sec'y, Bezuidenhout 30, The Hague, Netherlands.

Sept. 19-21—Texas Citrus and Vegetable Growers and Shippers, Inc., annual convention, Shamrock Hotel, Houston.—Austin E. Anson, Exec. Mgr., 306 E. Jackson, Harlingen.

Oct. 4-6—Florida Fruit and Vegetable Association annual convention, Hotel Fontainbleau, Miami Beach, Fla.—Association headquarters: 4401 E. Colonial Drive, Orlando.

Oct. 9-11—Produce Packaging Association annual convention and exposition, Conrad Hilton Hotel, Chicago.—Association headquarters: 500 5th Ave., New York 36, N. Y.

Oct. 10—South Carolina Fresh Fruit and Vegetable Association annual convention, Columbia.

Oct. 20-29—National Apple Week, sponsored by National Apple Week Assn., 1302 18th St., N. W., Washington 6, D. C.

Oct. 31—National Apple Day (Halloween).

Nov. 1-3—Florida State Horticultural Society annual meeting, Clearwater.—Ernest L. Spencer, Sec'y, Bradenton.

Nov. 16-18—Western Growers Association annual convention, Westward Ho Hotel, Phoenix, Ariz.—Headquarters: 606 S. Hill St., Los Angeles 14, Calif.

GRAND CHAMPION FATHER AND SON

Top honors in the strawberry competition at the 18th annual Western Tennessee Strawberry Festival held at Humboldt May 4-6, were shared by a 17-year-old boy and his father. A 16-quart wirebound crate of berries entered by the son, Felix Fly (left), was selected as the Grand Champion of all single crates. The Grand Crampion award in the "best three crates" classification was won by an entry of his parents, Mr. and Mrs. Denton Fly. Felix is active in the Future Farmers of America chapter at Milan, his home town, and his father is a Master Farmer.

STATE NEWS

(*Continued from page* 15)

appeared promising, except for peaches. Bloom has been exceptionally heavy, and several growers have done chemical thinning.

Fire blight control sprays have been in demand this spring, and some fire blight has shown up already. Antibiotics (Agri-Mycin 100) and zineb were used by growers with past fire blight trouble.

Scab has not been a problem thus far. Because of the early spring, growers expect increased disease and insect activity and expect to put on 9, 10, or even 12 sprays by the end of the season.—*Glenn Raines, Sec'y, Des Moines.*

Dry Weather

KANSAS—The peach crop survived the low temperatures in fair shape. In the Kansas City area, a near-normal crop is expected. Around Wichita and Hutchinson, from a third to a half crop is forecast. Dry weather continues as a real hazard.

Irrigation is being widely used wherever available. Emmett Blood, Dick Hancock, Jim and Wayne Cain, George Nicholson, C. Hurley, and others are watering extensively near Wichita. Norris Rees is doing the same in the Topeka area.—*W. G. Amstein, Sec'y, Manhattan.*

Heavy Bloom

RHODE ISLAND—Orchards are in heavy bloom this year. One-man concentrate sprayers and power pruners are increasing.

The state 4-H winner of the Apple Pie Baking Contest is Mary Lou Lallo, 17, of Westerly. She was presented a $25 bond on a TV program by Phillips Steere, president of Rhode Island Fruit Growers Association.—*Mrs. Florence E. Steere, Sec'y, Chepachet.*

Vice-president Dies

TENNESSEE—Julius H. Bayer, Murfreesboro, a sectional vice-president of the Tennessee State Horticultural Society, died April 21 at the age of 87. He was active in greenhouse, garden, and grove up until his final brief illness.

He presided at the society's 34th convention in 1938, when we entertained the American Pomological Society. He bore proudly the title of "Prof" which he earned as

(*Continued on page* 22)

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fmc 1955 Stericooler®

Here is an opportunity to get the most modern, up-to-date hydrocooling unit available... the new 1955 Stericooler—at an amazingly low price.

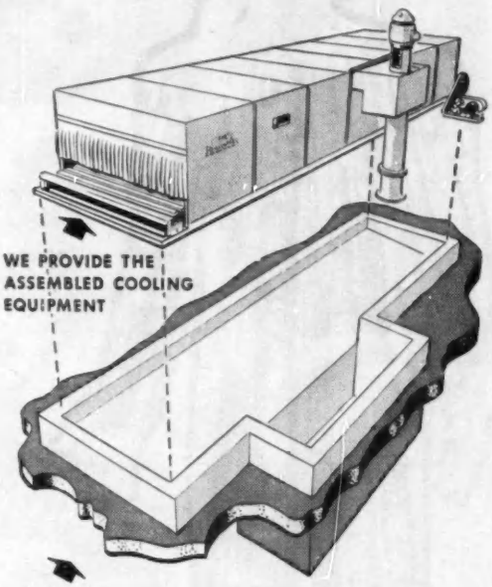
No other manufacturer has ever made an offer like this—you can buy a completely assembled Stericooler tunnel and conveyor unit (with Weir Box Pump and Motor, Drive gears and Motor Drive Unit ready for quick attachment on the job) *less cooler tank and ice tank.*

We give you detailed plans, specifications and instructions for building a concrete cooler tank and ice tank right in your own packing plant.

You save the considerable cost of prefabricated, cork-lined cooler and ice-tanks with no loss in insulation efficiency.

You get the benefit of new compact design, steel construction, greater cooling capacity, less ice consumption, greater production *for the lowest possible price!*

The 1955 Stericooler Model 31 (31-foot) or the Model 19 (19-foot) are available now.



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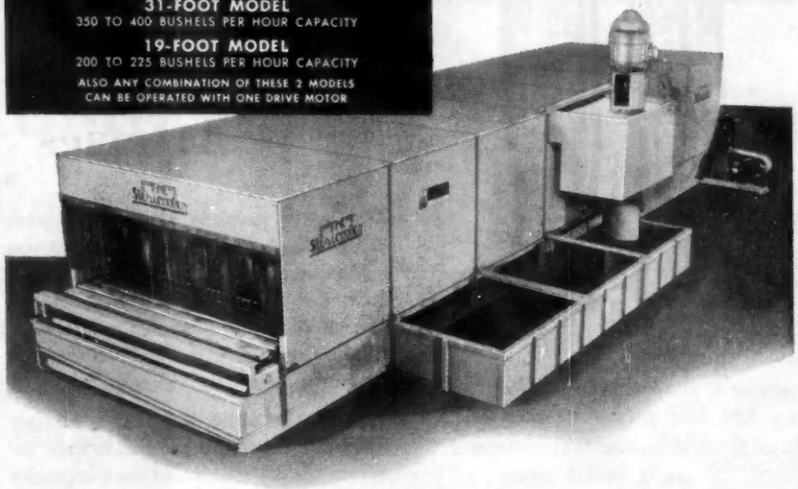

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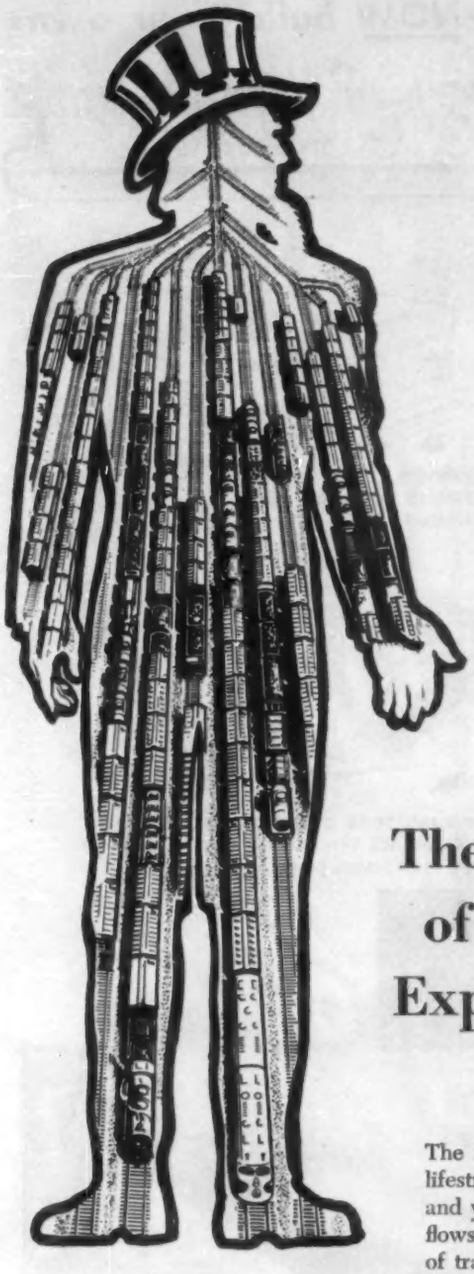

The Secret of Uncle Sam's Expand-able Arteries

The larger part, by far, of the great lifestream of goods that helps keep you and your country strong and vigorous flows through the nation's vital arteries of transportation – the railroads. And this is done with unique economy in manpower, fuel, and other materials.

Perhaps the most remarkable characteristic of these rail arteries is their inherent ability to expand their capacity more readily and with greater economy than any other form of transportation – particularly in times of national emergency. The secret, of course, lies in putting more tons in the cars and more cars in the trains.

But if the nation is to have the full benefit of these advantages, the railroads should have greater freedom to adjust their rates and services promptly – greater freedom to compete with other forms of transportation on an equal basis.

Association of American Railroads

Transportation Building
Washington 6, D. C.

National Farm Safety Week
is July 24-30.
"Your Safety is in Your Hands."

STATE NEWS

(*Continued from page* 21)

teacher and administrator at the State Teachers College for 20 years, but horticulture was truly his first love.

The wipe-out of soft fruits, apples, and pears by the big freeze was nearly complete, though there's a sprinkling of late-blooming apples. Damage to trees has been comparatively light, although some peach trees are recovering slowly, and further damage to woody tissue is anticipated.

Our strawberry crop, although late, will be only slightly below average. Acreage under irrigation has risen sharply, and we expect production records to start a healthy climb.—*A. N. Pratt, Sec'y, Nashville.*

Assessment for Fruit Promotion

ILLINOIS—A bill has passed through the House Agriculture Committee of the state legislature which, if enacted into law, will allow fruit growers to assess themselves per unit basis for the promotion of Illinois fruit.

The bill, sponsored by the Illinois Fruit Council, provides for a referendum of the producers upon the assessments as to the amount per unit, uses of the funds raised, and other actions of the appointed commission.—*Harold J. Hartley, Sec'y, Carbondale.*

FOUR-STATE FRUIT FIELD DAYS

Southeastern Pennsylvania will be the setting for the annual summer meeting of Appalachian area fruit growers from Maryland, Virginia, West Virginia, and Pennsylvania. Dates are July 26 and 27, John E. Linde, president of hosting State Horticultural Association of Pennsylvania has announced.

Activities will begin at 1:00 p.m. with a tour of Ontelaunee Orchards north of Reading. (See story about Ontelaunee Orchards on page 12). A chicken Bar-B-Q will highlight the evening program.

The second day's activities will include a tour through the Boyertown area, with lunch at 1400-acre Trexler Orchards north of Allentown. Demonstrations of chemical thinning, spraying, pruning, etc., and exhibits of equipment will also be featured.

Assess Big Freeze Damage

VIRGINIA—The state suffered disastrous damage to apples and peaches in the March 26-29 freeze. Northern counties escaped serious damage, but south of a line from Woodstock to Culpeper, the damage is very severe.

Protected orchards in the Piedmont counties are showing a fair crop of Winesaps, but no peaches. The exception is Carroll County in the Piedmont, where the kill equals that of 1921.

Estimate of the 1955 peach crop is about 250,000 bushels, as compared with 1.5 million bushels in 1954. Apples are estimated at less than half crop.—*John F. Watson, Sec'y, Staunton.*

Honored by Fraternity

FLORIDA—A number of men prominent in horticultural fields were initiated by the new University of Florida chapter of Gamma Sigma Delta, honorary agricultural fraternity, at Gainesville May 27.

Dr. H. Harold Hume, emeritus provost for agriculture and well-known horticulturist and author, headed the list. Other alumni included Frank L. Holland, Winter Haven, manager, Florida Agricultural Research Institute; Richard H. Simpson, Monticello nurseryman; Dr. Ralph L. Miller, Plymouth, official of Plymouth Growers Associ-

(*Continued on page* 24)

DOW

PRIME FRUIT
is the pay-off for better mite control with
OVOTRAN WETTABLE

Dow miticide is effective against a wide variety of mite species in all life stages

Apple growers can control mites with Ovotran® Wettable. This superior miticide kills mite eggs—and, because of its long-term residual properties, it remains effective against mites in all life stages from egg to adult.

For a preventive program, apply Ovotran Wettable to apples in the pink stage—again in the petal-fall stage if mites are still present. Then follow in the first, third and fifth cover sprays. Build-up of mites is suppressed. This preventive program is usually more effective and less expensive than a corrective control program. See your local agricultural authorities for general information.

Other Dow products for more profit in your orchard are Color-Set® to improve color and set on apples, and App-L-Set® for thinning apples. Insecticides are Lead Arsenate, DDT-50%-Wettable, Parathion-15%-Wettable, and Systox*, a systemic insecticide. Fungicides are Ferradow® and "Mike" Sulfur®. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

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STATE NEWS

(*Continued from page 22*)

ation; and Ed L. Ayers, Gainesville, commissioner of the State Plant Board.

Dr. J. Wayne Reitz, president of the university; Dr. C. V. Noble, dean, College of Agriculture; Willard M. Fifield, experiment station director, Dr. Roger W. Bledsoe, assistant director; H. G. Clayton, extension service director, and Marshall O. Watkins, assistant director, were initiated from the administration.

Dr. Walter Reuther, new head of the horticulture department, and Drs. Herbert S. Wolfe and R. A. Dennison were among department heads initiated.—*J. Francis Cooper, Ext. Editor, Gainesville.*

Trailing Berries on Trial

OREGON—Five new trailing berry selections on trial this year with 20 Oregon growers show promise as multiple-purpose berries.

They are reported to have good flavor and texture, small seeds, and to be suitable for fresh market, canning, freezing, and possibly blending with ice cream.

Prospects of using the new selections as whole-berry additions to ice cream will be examined by Oregon State College food technologists and dairy industry researchers. Strawberries are now the only commonly used whole berries that can be processed to remain firm without becoming icy in ice cream.

WHY ADVERTISE THIS YEAR?

With virtually all of the southern Illinois fruit crop frozen out this year, the Illinois Fruit Council has announced that its promotion of Illinois fruit will continue nevertheless. Publicity is needed to move the northern Illinois apple crop, and in the south, the council will work to help move the vegetable crops, to which many fruit growers have turned.

Says Harold J. Hartley, secretary, "We are here to assist fruit growers in their activities, and if vegetable growing becomes their temporary activity, we will make every effort to be of service."

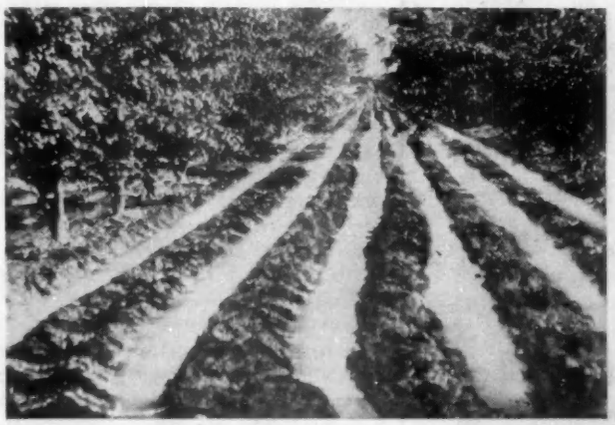
They will not be released until it is known how successful they are on the 20 soil types on which they were planted.—*Harold and Lillie Larsen.*

Weather Notes

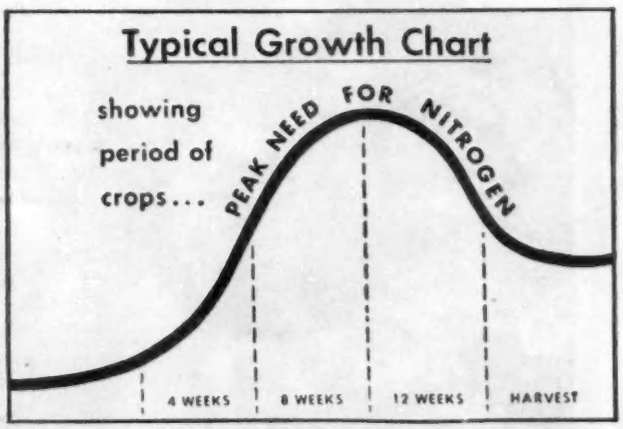
MASSACHUSETTS—Full apple bloom is expected, with no frost damage to apples or peaches. **MARYLAND**—Peach, apple, and berry crops look fine. Orchards are getting good care, but need rain badly. **MINNESOTA**—Pollination may be a problem, since sustained high winds and dust storms occurred during apple blossoming period. **UTAH**—Season is 2 to 4 weeks late. Some frost damage occurred in lower, colder locations to sweet cherries, but prospects of other crops are good. **SOUTH DAKOTA**—All fruit trees are blossoming full, about 2 weeks ahead of season, because of unseasonably warm weather. If later freezes do not come, a good crop is expected. **WASHINGTON**—Many Yakima Valley peach growers are heating heavily in the hopes of growing a profitable peach crop. Some Roza peach growers haven't had a crop in 8 years, the freeze situation is so bad. Orchardists have had three really bad nights this year, with temperatures dropping to 20°, and oil from their smudge pots has caused Yakima housewives to postpone their housecleaning until smudge season has passed. Reason for the furious smudge activity: the freeze-out of peaches in the South.

1. **"NuGreen" works fast** as a foliage spray. Combine it with pest-control sprays to save time, labor. Won't corrode equipment.

2. **"NuGreen" is efficient** for top dressing . . . resists leaching, stays in the soil. Releases nitrogen when tree growth needs it most.



3. **"NuGreen" is ideal for** application in irrigation systems. It dissolves readily in water, reaches roots because it's not fixed at soil surface.



4. **Different fruits need nitrogen** at different growth stages. For a quick nitrogen boost when the need is greatest, apply "NuGreen" in foliage sprays. For season-long feeding, apply early as top dressing.

For the most profit from supplemental nitrogen ...use NuGreen® FERTILIZER COMPOUND

Examples on this page illustrate some of the many reasons why "NuGreen" is your best buy when your crops need more nitrogen than is included in your other fertilizer materials.

"NuGreen" is concentrated . . . contains 45% nitrogen. It's in free-flowing shot form. Comes in 80-lb. bags. See your dealer for "NuGreen" and write to us for literature about its use on your particular crops.

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. . . THROUGH CHEMISTRY

NuGreen® FERTILIZER COMPOUND

Your best buy in supplemental nitrogen

PROTECT FRUIT CROPS NOW WITH PHYGON-XL

...rainy weather ahead

Wet weather is coming. That means fruit trees are in for trouble. It means apple scab and brown rot of peaches and cherries—and fungus infections of many types.

Phygon-XL effectively controls fruit blights; brown rot blossom blight of peaches; peach leaf curl, and many other fungus diseases. At the big Chazy orchard in New York's Lake Champlain country—the world's largest McIntosh grower—the apples last year were 99 percent scab free—after spraying with Phygon-XL.

Phygon®-XL is simple to apply, mixes effectively with the most commonly used fungicides and insecticides, is harmless to pollen and bees, and does not affect odor or flavor of fruit.

Order Phygon-XL from your local supplier today. Write, wire or phone us if unable to locate immediate source of supply.

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producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synklor, MH, Alanap, Duraset.

"We Don't Guess"

Applying water is a science at famous Dillon Orchards

By J. EARL WRIGHT

Production Manager, Dillon Orchards

IRRIGATION is considered a regular orchard practice at Dillon Orchards, Hancock, Md. Eventually, most of the 3,000 acres of fruit will be under irrigation. At present we are irrigating 350 acres of peaches and approximately 450 acres of apples.

Irrigation Schedule

Our schedule is set up so that our orchards will receive at least one inch of water every week, either by natural rainfall or by irrigation. Each orchard being irrigated has a rain gauge so that an accurate record can be kept of the rainfall, and thus enable us to determine the amount of water to apply for maximum production.

Irrigation is too expensive for guesswork. This year we plan to use a tensiometer or other gauge to determine the available water in the soil at each orchard. During the 1954 season, we determined this by digging down several feet and looking at the soil.

With the aid of proper instruments we will be able to make the most economical use of our water supply. Most of our irrigation water comes from man-made lakes, where we store up surface water in the winter and spring for use in June, July, and August. At one peach orchard of 175 acres we have a series of six dams near-by whose combined capacity is 30 million gallons. This is enough water for two applications of three inches each.

Rate of Application

Rate of application is important, and varies with each orchard. Where we have good cover crops, we can apply water at an average of one-half inch per hour.

In our peach orchards we cut the cover crop down with a multi-chopper prior to irrigating. The cover crop is torn up enough to stop its growth and give a trash cultivation effect with many small pockets to hold the water.

We make three settings a day in order to cover as much orchard floor as possible with a minimum of equipment. Since irrigation by daylight is rarely more than 70 per cent

efficient, we do a considerable portion of our irrigating at night, when the efficiency rate is generally above 90 per cent. Some of this saving in water is offset by less efficient use of labor, however.

Bigger Peaches

Elberta peaches irrigated seven weeks before harvest this past season with 3 inches of water, and again three weeks before harvest with 2 inches of water, had an average increase in size of one-half inch over non-irrigated peaches of the same variety. We plan our irrigation so that it is completed one week before harvest. The top soil then has time to dry out, and the crop can be harvested without miring.

On the basis of past experience, we will do less thinning on peach blocks to be irrigated this season. By thus changing our thinning practices and by more efficient use of our water supply, we expect to increase our peach yields 50 to 60 per cent in 1955. THE END

PICKING MACHINE

AN ingenious inventor by the name of Jolly James, Melvindale, Mich., thinks that laborious hand methods of picking fruit from ladders are only for the old-fashioned at heart. An electrician by trade and an inventor by hobby, he has put his ability to work and the result is the Jolly Fruit Picker shown above.

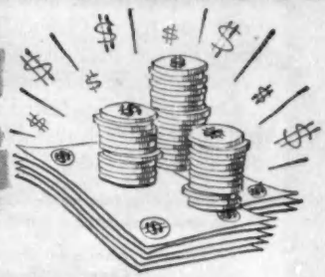
Three pickers at different heights pick the tree from top to bottom as the tractor is moved around it. Hydraulic cylinders control the movement of the pickers into the tree. Fruit is dropped into the canvas tubes and received in a sponge rubber catcher. An endless belt then picks up the fruit and conveys it to the sizer and grader mounted on the side of the tractor. At the back of the tractor, fruit is boxed and the lids nailed on.

Working drawings of an inexpensive Plastic Greenhouse, prepared by the University of Kentucky, together with descriptive leaflet, may be obtained for 25 cents in coin or stamps from AMERICAN FRUIT GROWER, Willoughby, Ohio.

Portable Aluminum

SPRINKLER IRRIGATION

SAVES Money MAKES Money



for FRUIT GROWERS!

ALUMINUM REDUCES IRRIGATION COST IN WEST—reports Bill Adams, Radio Station KGO, San Francisco

"To California fruit growers, irrigation is part of everyday life. Not for *increasing* production, or for insurance, but as a necessity. And with us, the big question has been *cost*. Now, with aluminum being used in sprinkler irrigation, the cost has been coming down. Cost not only in labor, which is important with everyone, but in saving water, which is so precious to us out in California."

IRRIGATION EXTENDS GROWING SEASON IN MIDWEST—reports Dix Harper, Station WLS, Chicago

"The Michigan fruit and vegetable growers are using sprinkler irrigation for something we don't normally think about, and that is to give them a longer season. They use it in the spring on strawberries as a frost preventative and again in the fall to extend the season."

NOW! A NEW MOVIE ON THE MIRACLE OF PORTABLE ALUMINUM SPRINKLER IRRIGATION!

Bill Adams and Dix Harper have joined with three other farm reporters to make a movie called "Sprinkler Irrigation Roundup". It's full of eye-opening facts —results of irrigation on all types of crops, in all parts of the country. If your club or organization would like it shown free of charge, ask your farm leader. He can arrange it. Or write for details.

See "Mr. Peepers", starring Wally Cox, Sundays on NBC-TV

This sign identifies dealers who sell Reynolds Aluminum Irrigation Pipe.

This label is your guarantee of genuine Reynolds Aluminum Pipe.

Member of SPRINKLER IRRIGATION ASSOCIATION

FREE BOOKLET!

"More Income Per Acre" tells how portable sprinkler irrigation can work for *you!* This is the one big opportunity for new income open to every farmer. Send today! Reynolds Metals Company, P.O. Box 1800-SP, Louisville 1, Kentucky.

REYNOLDS ALUMINUM

CHLORO-IPC controls weeds in onions and leafy crops!

You'll never realize how much money Chloro-IPC may save you until you try it. Chloro-IPC will slash your weeding costs and bring bigger, healthier yields. Your profit per acre will increase proportionately to reduction in costs of weeding.

Onions may be treated any time from planting to crook stage, and after three leaves have formed. Spinach is treated immediately after planting.

For further information on the use of Chloro-IPC in spinach, onions and other crops, contact any of the manufacturers shown below.

Associated Chemists, Inc., North Collins, New York
Chapman Chemical Company, Memphis, Tenn.
Chipman Chemical Company, Portland, Oregon
Co-op. G. L. F. Exchange, Inc., New York, N. Y.
General Chemical Division, New York, New York
Midsouth Chemical Company, Memphis, Tenn.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Niagara Chemical Division, Middleport, New York
Riverdale Chemical Company, Harvey, Illinois
Thompson-Hayward Chemical Co., New Orleans, La.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
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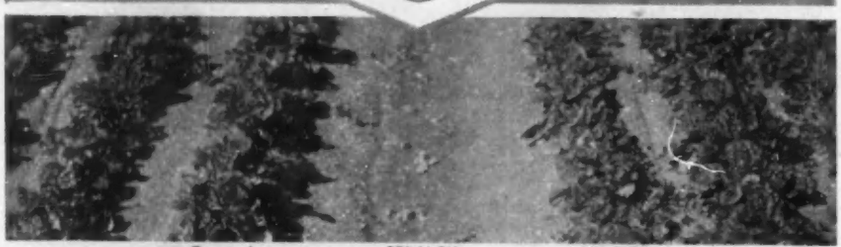
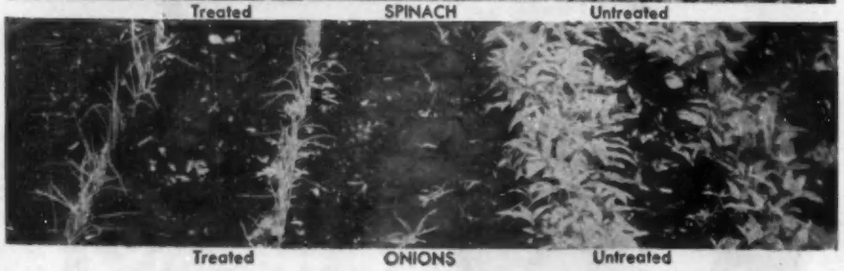
CHLORO-IPC FOR FRUIT AND FOREST NURSERIES, COTTON, FIELD LEGUMES, SEED GRASSES



Treated SPINACH Untreated



Treated ONIONS Untreated

Peaches Like SOD-MULCH

They thrive under this system just as do other tree fruits

SOD culture, which has been used successfully in apple, apricot, sour and sweet cherry, plum, and pear orchards, can be practiced in peach orchards also.

A 10-year study by J. R. van Haarlem, of the Ontario Horticultural Experiment Station, has shown that a sod-mulch combination results in excellent growth and fruiting of peach trees. The test plots consisted of seedling trees, which were given the following treatments:

Four Treatments

Plot 1. Clean cultivation for two weeks in the spring, and then sown to a standard green-manure crop.

Plot 2. Grass sod, consisting of orchard grass and Canada bluegrass.

Plot 3. The same grass sod as in Plot 2, plus a thick mulch around the trees within the spread of the branches.

Plot 4. Clean cultivation for two months, followed by the same green-manure crop as in Plot 1.

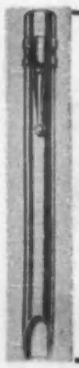
The mulch material used in Plot 3 varied, since it is difficult to obtain in the area. At first, two bales of dry straw per tree were applied; then mown grass from between the trees was used. In 1949 a 4-inch layer of finely chopped spruce bark containing some poplar sawdust was applied. Station workers considered the maintenance of a suitable thickness of mulch more important than the type used.

Each spring, about April 15, ammonium nitrate was applied at the following rates: Plots 1 and 4 received a basic application of 2 ounces per year of the tree's age; Plots 2 and 3 received a ring application equal to 4 ounces per year of the tree's age, applied just under the periphery of the branches, plus an amount broadcast at the rate of 200 pounds per acre over the remaining sod area.

Results

The sod-mulch treatment gave the most satisfactory growth and fruiting. Unmulched sod gave poor growth in the first few years, but later improved somewhat. In most years, two weeks of cultivation gave better results in tree growth than two months of cultivation.

The first result noticed was a detrimental tree effect in the sod and



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sod-mulch plots. Trees appeared yellow and lacked vigor, especially in Plot 2. Also, during the first few years, trees in Plot 1 were less vigorous than those in Plot 4.

After the fourth year, Plots 1 and 3 showed much better tree growth than the other two, but Plot 1 showed a thinner type of growth than Plot 3. Also, sod-mulch trees had much larger leaves, with better finish, than any of the other trees.

The fruiting behavior of sod-mulch trees was much better than the others. Fruiting wood was thicker, nodal length was shorter, and there were more buds per foot of shoot.

Also, there was less danger of brown rot in Plot 3, as the sod-mulch harbored fewer mummies.

Benefits of Mulch

Mulch benefits the trees by causing moister, cooler soil conditions. Also the lack of cultivation and the consequent reduction in root pruning cause the feeder roots to work closer to the soil surface where aeration and moisture conditions are more favorable and plant nutrients more available.

The two main requirements of a successful sod-mulch program, they decided, are 1) an adequate thickness of mulch material, and 2) a slightly increased fertilization program, particularly to supply nitrogen to the sod cover. THE END

ROOT WEEVILS

(*Continued from page* 15)

may be applied to the soil surface before planting by putting the emulsion form through a spray machine that will give an even cover. Wettable powers should not be used with weed sprayers since they will plug the nozzles. A spray rig with constant agitation and with orchard-type nozzles at intervals on a boom should handle wettable powders satisfactorily.

Growers who wish to apply an insecticide with a fertilizer spreader may use granular clay carrying 2.5 per cent insecticide. Two hundred pounds of the formulation would contain 5 pounds of active insecticide. With strawberries, less satisfactory results are usually obtained from broadcast application of fertilizer than from band application.

Mixing Insecticides in Soil. **The most important step in protecting strawberries with soil insecticides is the prompt and efficient mixing of the material into the top 6 inches of soil. This is best accomplished by roto-cultivating the field thoroughly just after treating. If this method cannot be used, a "split" insecticide application will give fair results. Apply half the insecticide and follow this by triple discing with the discs set to turn over the soil. Then plow the field 6 inches deep and apply the balance of the insecticide. Triple disc again and the field is ready for planting.**

Dilutions for Home Growers. **Ornamental plants or strawberries in home gardens can be protected from root weevils by the methods described. Gardeners may use 9.3 pounds of 2.5 per cent granular insecticide per 1,000 square feet to apply the equivalent of 10 pounds per acre. For sprays, 15 tablespoons of a 50 per cent active emulsion per 1,000 square feet should be used.**

Precautions. **Several of the insecticides mentioned are powerful, so *be sure to follow directions on the insecticide package.***

Taste tests have not been completed in Oregon for canned strawberries grown in soil treated with insecticides. To play safe, use the after planting method if you plan to can strawberries. Both methods have been cleared for freezing in Oregon.—*R. G. Rosenstiel, Oregon State College, Corvallis.*

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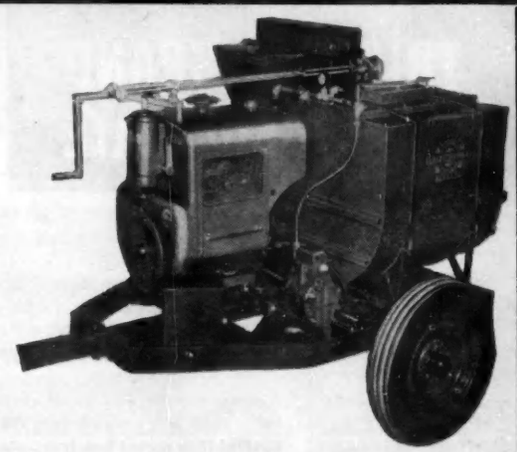

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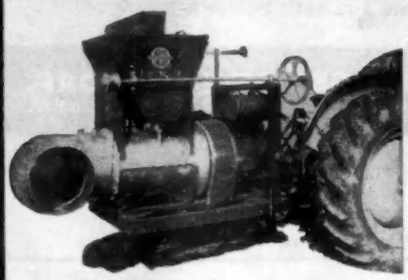

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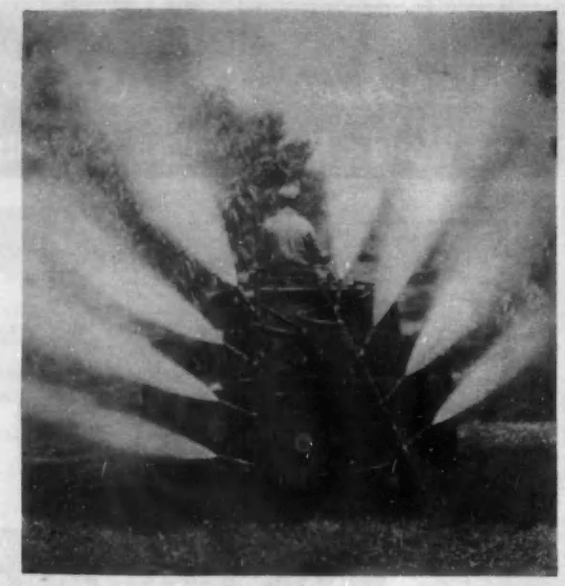

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TREE-by-TREE IRRIGATION

Ohio orchardist has novel way of applying water to his trees

IVAN ROCKWELL, whose Twin Oaks orchards in Mount Vernon are one of Ohio's progressive fruit enterprises, finds that irrigation has become a regular part of his orchard program. Ivan likes to apply the water direct from a tank truck to the trees and finds that this type of operation fits in well with his method of soil management.

Using a Dodge Power Wagon with a wide range of gears, he moves slowly enough to apply 150 gallons on one side of a tree and another 150 gallons on the other side the next day. With this arrangement, one man puts on 3,000 to 4,000 gallons an hour.

Sprays Water Under Trees

Ivan's peach orchard is in clover sod. To prevent the sod from dissipating soil moisture reserves, Ivan mows it as many as five or six times a season. Also, to prevent runoff, the water is sprayed under the trees at 100 pounds pressure. A long pipe at one side of the truck has 10 openings through which the water is applied.

Ivan finds that with this system he can apply the water as needed,

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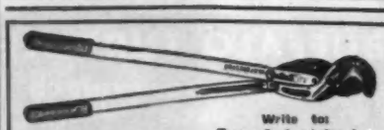

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FLORA DALE, PA.

making spot applications as necessary.

His apple orchard is also in sod. He mows it five or six times a season, and uses a Gravely rotary mower to cut the sod close to the trees. Last year in a block of Red Delicious, he watered half the trees and got fruit that was not only a size larger but also uniform in size so that all of it could be picked at one time. The unwatered trees yielded smaller apples, and it was necessary to spot pick the fruit three times.

Ivan likes the idea of throwing the water under the trees. Sprinkling the peaches might cause brown rot, he believes. Last season he applied over 3 million gallons to his fruit trees. Total fuel for truck and supply unit per 500 gallons of water was 1 quart. Ivan could run the water truck 24 hours a day from the lake he built near his orchard.

He aims also to keep the sod in his orchard green. When the grass turns brown he finds that clover and two-spotted mites leave the burnt-out sod and attack the green leaves of the trees.

Ivan also adapts his tank truck to other useful purposes. He equips it with a power take-off hose reel and 150 feet of one-inch hose for fire protection and for cleaning farm equipment. The truck with its winch is used for moving heavy objects and for pulling equipment that has become mired in mud. THE END

NEW APPLE VARIETY

WELLINGTON, an early, attractive apple, has been introduced by the New York Experiment Station at Geneva. Its name honors Prof. Richard Wellington, who headed the station's fruit breeding work for many years.

Resulting from the crossing of Cortland by Crimson Beauty, Wellington is quite early, ripening 8 to 10 days before Melba or Duchess. It appears to be an annual cropper. It produces good pollen and is a fairly early bloomer, reaching full bloom within a day of McIntosh.

Fruit is attractively solid red-streaked, of large size. It ripens evenly and may be picked at one time. It can be held in storage for a month and still be acceptable for fresh market sales.

While not of high quality, it is considerably better than Duchess. In processing tests Wellington made a very satisfactory sauce, golden amber in color and coarse grained, a desirable texture for sauce. Trees are available from the New York State Fruit Testing Assn., Geneva, N.Y.

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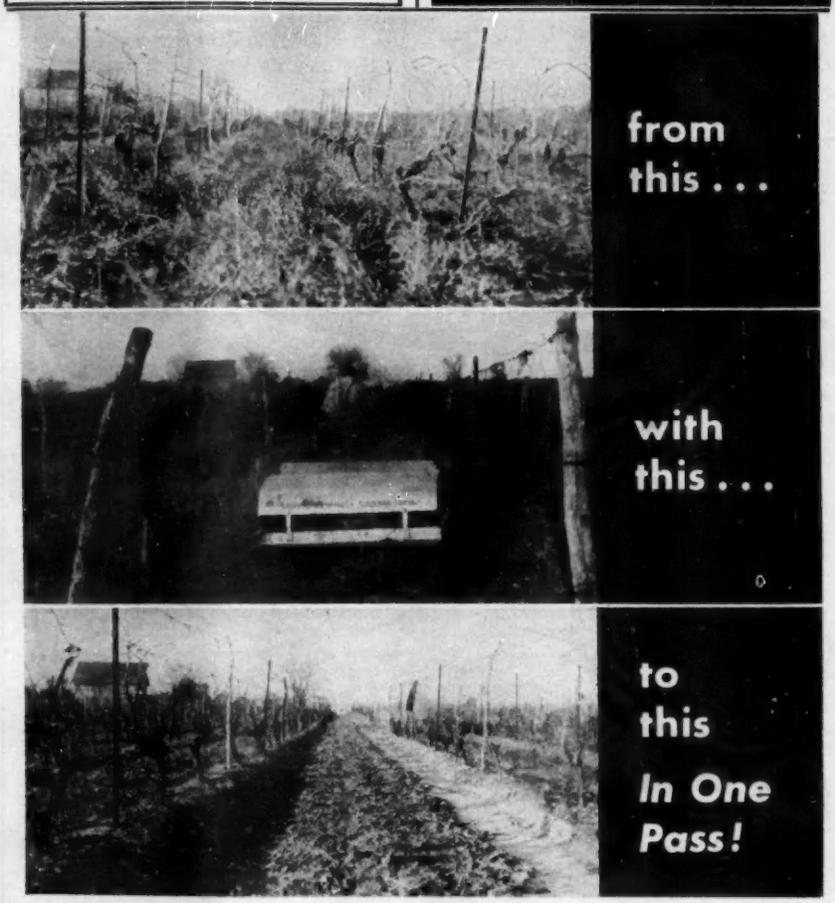

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For more details, please write, giving make and model of your tractor.

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YOUR FRUIT TREE AND WATER

(*Continued from page* 11)

get enough water? The functioning of the leaves is drastically reduced. The leaf is a complicated, spongy structure which has on the lower surface thousands per square inch of small openings, or pores, called stomata. These normally close at night but open when light strikes the leaf in the morning. They remain open until some degree of wilting occurs in the leaf. On a cool, cloudy day, they may remain open all day. On a bright, sunny day, when moisture in the soil is abundant, they may stay open until noon. If the moisture available to the tree is reduced, they may remain open for only a short time in the early morning or they may not open at all if the soil is so dry that moisture to the leaves is not replenished during the night.

Stomatal opening is apparently closely correlated with the functioning of the leaves in building sugars and other carbohydrates. When trees suffer seriously for lack of water the period of daily stomatal openings is very short and there is little growth of fruit or little thickening of shoots or branches.

How much water does an apple or a peach tree use? The amount of water that passes through a tree during a day if there is a sufficient supply in the soil varies with the size of the tree and the temperature, the humidity, and the movement of the air. The rate of evaporation of the water from the leaves of the tree will vary from day to day just as the rate of the drying of clothes on a line will vary.

On cool cloudy days with high humidity, little water is used. On the other hand, on hot days with low humidity and particularly with rapid air movement, very great quantities of water pass through trees if water is available in the soil in all of the root zone. Certainly, on such days, a vigorous 20 to 25-year-old apple tree with a large leaf area will use up to 125 gallons of water. A full-size bearing peach tree will use about half as much.

This would be the extreme usage under conditions of maximum evaporation. Average usage under eastern orchard conditions is not much over half that amount, or about 60 to 70 gallons per day for large apple trees and 30 to 35 gallons for peach trees. An acre-inch of water is 27,000 gallons. Thus under average conditions, the 50 apple or 90 peach trees usually planted per acre will use about one acre-inch of water per week during the summer months.

If those amounts of water are not available to the trees, they adjust to a shorter supply by reduced periods of stomatal opening, by reduced rate of growth of fruit, and by reduced deposit of starch in trunks, twigs, and branches. Fortunately our fruit trees will survive long periods of greatly reduced water supply, but they cannot do it without serious loss to the crops carried.

When to Apply Water

A question often asked is, "When should water be applied to orchards if irrigation is available?" The basic consideration for best growth of fruit is to keep the driest part of the soil above the wilting percentage. If soil-moisture measuring devices are used, they should be installed where the roots are dense in the soil.

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HANDY ANDY

A sign with eye appeal is this large red apple with green leaves designed by fruit grower Roy Hulbert, Holliston, Mass., and painted on framed sheet metal. Since Hulbert erected this sign beside the highway he has had no trouble selling all of his apples.—*Charles L. Stratton.*

A good practical guide is to irrigate when shallow-rooted plants growing under the tree branches wilt. Another practical guide under eastern United States conditions is to keep careful rainfall records and irrigate when rainfall has averaged less than 1 inch per week for as long as 3 weeks. It is better to err on the side of putting on more water than necessary rather than using too little if the water is available.

With peaches, the most critical period in the development of the crop is the 35 days before harvest—the period of very rapid fruit growth. If the total water available is limited and it is possible to save most of it for that critical period, it is wise to do so.

Use of ample water for the trees makes possible a little more generous use of fertilizer and in peaches a little less severe pruning and leaving somewhat more fruit on the tree at thinning and hence heavier production per tree. Even with irrigation, however, fruit must be properly thinned if a crop of good-sized, high-quality fruit is to be produced.

THE END

HAPPY ACCIDENT

(*Continued from page* 13)

resulted in an average yield, from 1949 to 1953, of 1.6 bushels per tree.

This includes some years of severe winter and frost injury, also droughts. In 1954, with some winter injury, but also *with irrigation*, they produced a crop of approximately 3.2 bushels per tree. What's more, 85 per cent of the peaches were 2¼ inches, and most of them were over 2½ inches.

Compared with 1953, this was a 50 per cent increase in yield of early peaches. It was not necessary to irrigate the Elbertas, as there was sufficient rain in August. Size was good too, because of the thinning job.

Hoffman points out that they've added a half inch to the size of the peaches, and doubled the crop through use of irrigation. He knows, because he had control trees in every block.

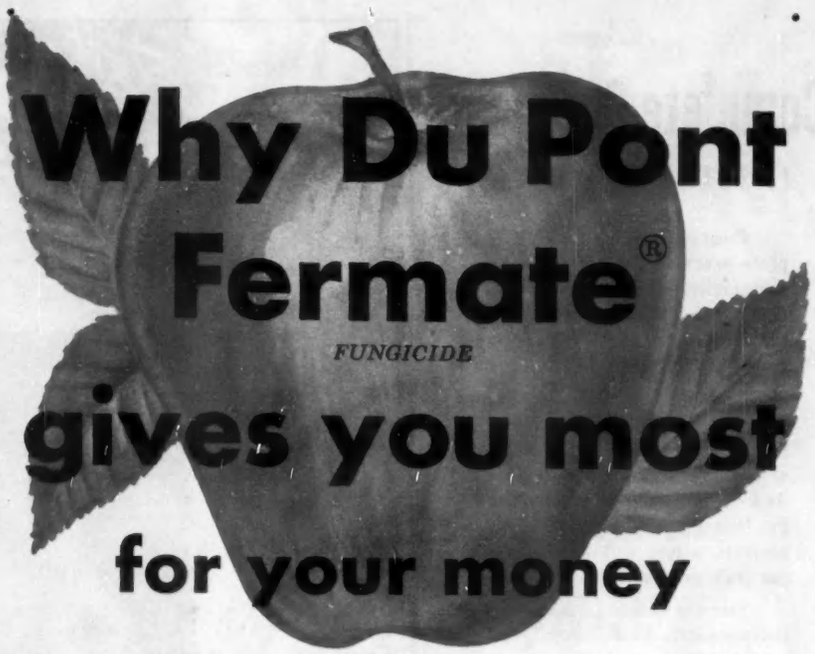
Hoffman has kept an accurate cost record. Last year 197 acres were irrigated, of which 125 were apples and 72 peaches.

IRRIGATION COSTS PER ACRE
Ontelaunee Orchards

Labor	$ 6.75
Fuel	0.576
Depreciation	14.77
Total	$22.096

The depreciation figure includes extra piping, particularly on the long lines for the apples.

All in all, Ontelaunee Orchards is so pleased with the result of Hoffman's "happy accident" that they plan full irrigation for 1955. THE END



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WINDFALLS

It is said that Isaac Newton while sitting under an apple tree was struck on the head by a falling apple. Thus he conceived the great truth of his Law of Gravitation.

By HENRY BAILEY STEVENS

Old Familiar Bluebird "WHAT with the endless battle against bugs, brush and blight, we fruit growers would be in a deep rut if it were not for the birds, bees, blossoms, roses, and grandchildren." So thinks Owen P. Morton of Kalamazoo, Mich. "Our big old farm home is situated on a once fertile prairie. Its tall shade trees, honeysuckle hedge, spacious lawn, large old barn, and soil that holds angleworms and night-crawlers make it almost a bird paradise. For years we have had the pleasure of watching many different birds and their ways of living through an 8-power field-glass."

His first bird adventure of the year suddenly broke the monotony of pruning. "I had been at it in deep snow, heavy clothes and with cold fingers—all winter, it seemed. Then on March 12 I noticed a bluebird keeping one tree ahead of me. Just to see if he were an old friend, I walked toward the house I had made for them several years ago with a hinge on the roof. He beat me there. I cleaned out their nest, stepped back 20 feet and stood still. He immediately went inside for about one minute, came out, perched on top, and let out a few familiar abbreviated warbles. I knew then that he was OUR bluebird. He took off for the south, to remain for a few weeks before his return with his mate."

But Mr. Morton went back to his pruning with a lighter heart, realizing that spring had come. "It would soon be blossom time; the orchard would be all cleaned up and smell and look its best. It is then that the fruit grower is the aristocrat of all farmers."

Bluebirds feed mostly on insects and are quite friendly. "Four years ago our mother bluebird was at first quite excited when we opened the top of her nest to peek at her five little blue eggs. Last year she was very accommodating; she would leave the nest and sit on a limb a few feet above while I lifted our grandchildren up for their first view. Later when the eggs were hatched out, the mother seemed to place her confidence even in our handling of her babies!"

Bees Lightened the Load MARVIN W. Kosanke, of Ripon, Wis., finds a similar relaxation in watching the bees for an hour or so. "An apiary of meticulously painted hives on a luxuriant grass carpet under the blossoming trees is a sight to behold," he exclaims. He sits in the warm sunshine watching them bring in the precious pollen and nectar with the air filled by their pleasant hum and the enchanting fragrance of the bloom. He recalls the underlying co-operation: how the tree supplies food to the bee and the bee pollinates its blossoms. And he concludes:

"Too many people measure a successful man by the money or property he accumulates, but there is a far greater richness acquired by living close to Nature."

Summer, too, in the apiary has its compensations. "During the heat of the noon, what is more restful than to spend a few moments there in the welcome shade of a nearby tree? Watching the bees come flying in from all directions with their heavy loads helps to relieve one of all his weariness. The air seems alive with their endless hum. We realize too that there is much to be done, and go back to work freshly inspired.

"Then, with the coming of the bright warm days of autumn, we see the result of Nature's handiwork. The trees are now laden with fruit, and as the bees fly lazily about the

hives that they have filled with honey, they seem to have a feeling of self-satisfaction for a season of fruitful labor. And as you stand near the hives in the orchard this very same feeling seems to envelop you, too. You are very thankful for the privilege of having a small part in Mother Nature's scheme."

To Mr. Morton, birdman, and Mr. Kosanke, beekeeper, we split the prize this month for their philosophy.

Browning Has a Chance THE cryptic poem, "Whispering Orchard," by Alice G. Burghart in our March column, left H. P. MacFarland of Merion, Pa., "so confused that I wondered why you published it. I read your comment and reread the verses with no light dawning. I was struck by your statement that you read it many times before you understood it, so I read it some more. Finally 'Early to North and late to not' got through and with it the rest began to shine brightly. I am glad Mrs. Burghart embarked upon this bit of unusual poesy and that you published it, because now I feel that some day, if I keep reading them, I will understand some of Browning's poems, that up to this time I doubted if he really understood himself."

Meanwhile Mrs. Burghart, who in her professional life as grapho-analyst keeps her maiden name of Alice Gordon Statler, writes us: "Thank you very much for your kind words. My Father was a printer and disappeared a long time ago. You see my beautiful Mother died at my birth. Poetry just comes to me by the bushel. Some days I can't write it down fast enough. I have not tried to sell any of it. When your letter arrived, I sat right down and this is what came of it:"

To My New Printer

I loved a printer a long time ago.
Where he is now I do not know,
But as a child I loved him well.
He stood with my mother beneath a bell;
They cut a cake and drank a toast,
And I'm the one who remembers it most;
For I'm the one—my tears must fall—
I'm the one who ended it all.

We'd be happy to taste some more out of that bushel, Alice G.

Address your "Windfalls" contributions to Henry Bailey Stevens, AMERICAN FRUIT GROWER, Willoughby, Ohio.

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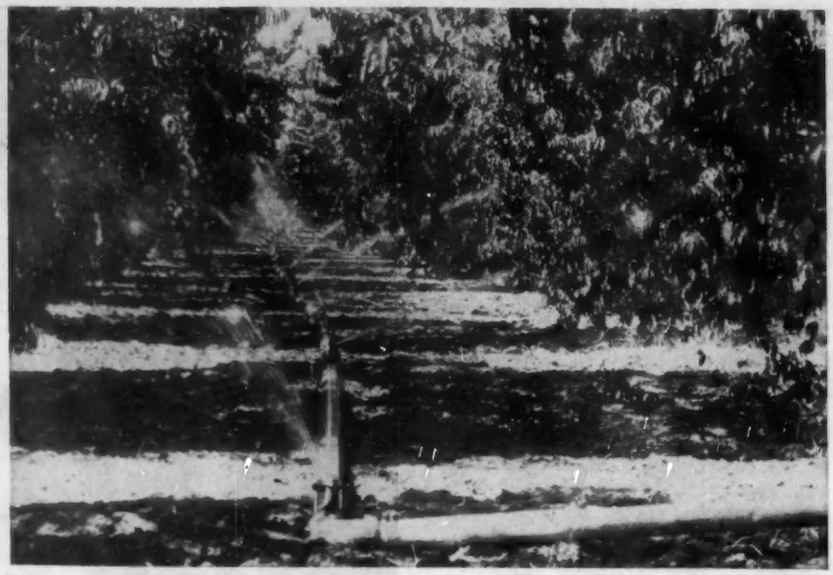

Irrigation line in Wood Fruit Company 195-acre peach orchard in San Joaquin Valley of California.

FEEDING TREES the Easy Way

Wood Fruit Company finds their sprinkler system is ideal way to supply fertilizer to peach trees

By F. LELAND ELAM

ASK Elmer Wood and his son, James, what their biggest advance in orchard management has been, and they'll reply immediately, "Sprinkler irrigation."

Four years ago they installed a sprinkler irrigation system at the Wood Fruit Company ranch in California's vast and fruitful San Joaquin Valley. Nine varieties of freestone and cling peaches are grown on 195 acres. Other operations include almonds, grapes, sweetpotatoes, alfalfa, and dairy cattle.

The orchards lie in a slightly rolling area where the soil is generally sandy and very permeable. There are scattered areas of heavier soil that caused trouble in the past.

James says, "The use of the sprinklers has simplified irrigation on the rolling terrain, once a continuous headache. The sprinklers have also eliminated the need for borders as used in our previous irrigation method and the need for breaking them down after use to permit other operations.

"We get a more uniform application of water on both the heavy and sandy soils."

Laborsaver

An eight-man crew was formerly needed to irrigate 300 acres. Four men now do the job, working on shifts. Sprinklers are kept working 24 hours a day in the spring, summer, and fall. The sandy soil permits the moving of a line immediately after water is turned off, and other operations can be started without delay.

They use a large nozzle Rain Bird sprinkler head that discharges 3½ gallons per minute. Wood can calculate the length of time to sprinkle on any run, thus getting a predetermined application of water. Anderson-Miller couplers and aluminum pipe are used to carry the water.

Besides these improvements in irrigation the new sprinkler system has had some unexpected effects on fertilization, as well as on tillage, weed control, and dust and mite control.

Sprinkler Fertilizing

The fertilizing job has been simplified by applying the fertilizer through the sprinkler system. The Woods report that this system is more efficient, since the water distributes the fertilizer evenly.

A portable upright fertilizer tank (made by Prizer Applicators, P.O. Box 1609, Bakersfield, Calif.) is used. It holds 250 pounds of soluble powdered fertilizer, and can be moved from pumping site to pumping site.

Outgo water from the pump goes into the tank through a small line at the bottom, boils over the powder, is drawn out in solution form by the pump suction, and dumped into the irrigation water that goes out to the sprinklers.

Flow of fertilizer from the tank can be adjusted so it will go out in 15 minutes or will flow slowly for four

hours. The Woods generally make a fast outgo so that succeeding waters will wash the fertilizer down into the ground. They feel that sprinkler irrigation prevents plant nutrient losses from leaching, a problem under the old system.

Weed Control

Tillage operations and costs have been greatly reduced by the new irrigation method. The tilling done now actually helps to control weeds, a vital problem in the area, with puncture vine, sandbur, and Johnson grass the big offenders.

After each sprinkling, just as soon as weeds are one to two inches high, the ground is spring-toothed deeply enough to get all the new weeds. Indications are that killing these surface sproutings will eliminate most of the weed seeds from the soil and greatly reduce the weed problem in the future.

Dust and Mite Control

During harvesting operations, the spring-toothing is stopped. The light soil crust which sprinkler irrigation causes to form keeps dust at a minimum. This has lessened the mite control problem, a serious one in the warm San Joaquin Valley.

Since the introduction of the sprinklers, only one mite spray a year is needed. This is put on around May when the trees are at what he calls the popcorn stage of bloom. They try to do the spraying just before the mite eggs hatch.

The results of these practices? An average of 115 to 120 carloads (about 168,000 crates) of freestone peaches go to California and out-of-state markets. Another 200 tons of freestones are cut and dried in the ranch's own cutting shed and drying yard. The clings and some freestones are sold to canneries at an average of 1,000 tons a year. THE END

James Wood adjusts top on soluble fertilizer tank. The Woods say fertilizer is distributed more evenly when applied through irrigation system.

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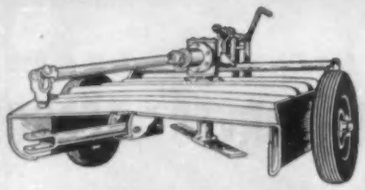

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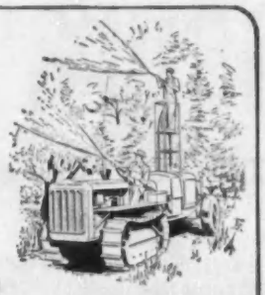

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Plan

BEFORE YOU INVEST

Irrigating berries will pay you handsomely provided your water supply and irrigation system are adequate

By ELDON S. BANTA

THE most common mistake made in irrigating berries is failure to plan. This is costly and prevents making most efficient use of water and irrigation equipment. It pays to plan each procedure carefully in advance of actual installation of the system. Once installed, it is a good idea to study your irrigation system annually, to eliminate its weak places.

How's the Water Supply?

Make sure that you have enough water available to irrigate the acres you hope to cover, even in the driest season.

If you are going to pump from a stream learn its history of flow. It may not provide enough water for you in dry seasons. Also, check up on laws governing the use of water from streams in your state. If you will use most or all of the water flowing down the stream, then you may be in trouble.

Large lakes are good sources of water, but often are not situated near enough to where you want to grow berries. Again check on your right to use the water.

Deep wells with large capacities provide water for irrigation on many berry farms. However, in most areas, wells are not dependable for large, continuous flows. Study the well capacities of your area before you drill.

Farm ponds are convenient and often the most economical sources of water for irrigation of berries. Too often, though, they are too small for this purpose.

A farm pond should hold from 1 to 1¼ acre-feet of water for each acre to be irrigated. The watershed draining into the pond should be large enough to refill the pond during non-irrigating periods. Four acres of watershed is usually ample to supply an acre-foot of water in a pond. Thus, if you are planning to irrigate 10 acres of berries, your pond should hold at least 10 acre-feet of water. Its watershed should cover at least 40 acres. By following this rule you can have water for berries even in the driest times.

What Kind of Equipment?

When you start planning your irrigation program, call in an irrigation engineer. Most irrigation companies have them at your disposal. An engineer's service may save you dollars now and headaches later.

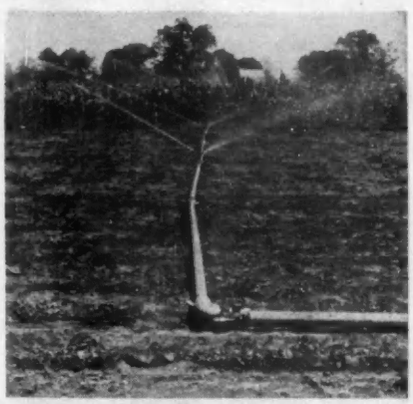
When planning equipment needs, start with the number of acres you plan to water, the soil that is to receive that water, and the crops that are to use the water. Develop your

Irrigation water on Charles V. Lamer farm, Cobden, Ill., comes from three ponds. This one holds between 8 and 9 acre-feet of water, enough to irrigate 8 or 9 acres of berries.

program upon this basis and you will avoid many mistakes.

You will want to know how fast water will soak into your soil as well as how fast water drains away through it. You want to know how much the plants use per day or week. Information pertaining to these factors can be obtained from the USDA and your state experiment station. This information is needed to help you and your engineer determine size of pump, pipes, and sprinkler nozzles you will need. If your soil type will take only a half inch of water per hour before runoff, then the system must be geared to this rate of application.

The proportion of bare soil to soil covered by plant foliage is necessary to know. Larger drops and sometimes heavier applications can be made on



Small sprinklers in strawberry planting of Ted Lyons, Searcy, Ark. Lyons has 8 acres of berries under irrigation, plans more. Source of water is a well 84 feet deep. A Fairbanks-Morse deep well turbine pump delivers 500 gpm. Laterals are 900 feet of 3-inch lightweight aluminum pipe. Fifteen Rain Bird No. 40 sprinklers are used at a time.

soil covered with foliage than on bare soil. Pressure at the nozzle determines to some extent the size of water droplets hitting the soil. In most berry fields the finer droplets are better than large ones, hence higher pressures may be needed than for some other crops.

How Much Pipe?

Labor requirements must be considered. Some berry growers like to lay out enough pipe to cover their entire acreage. This runs pipe cost up but reduces labor. Others find it economical to water only a fourth or a tenth of their acreage at a time, saving pipe and utilizing available labor.

Fields to be irrigated should be laid out so as to utilize the least amount of pipe, both portable and permanent, and to necessitate the least amount of pipe moving. A poorly arranged field can take twice as much pipe and labor as one properly designed.

How Much Water?

A fine crop of strawberries can

(*Continued on page* 40)

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DEALERS WANTED

PLAN BEFORE YOU INVEST

(*Continued from page* 39)

be lost to fruit rot from too much water before and during the harvest season. Some growers have learned that excessive irrigation during this period makes for big losses as well as for big berries.

Heavy irrigation of black raspberries during the ripening period can cause heavy losses from anthracnose infection. Dampness in the field and succulent growth of the fruits and fruit stems provide ideal conditions for this disease to propagate.

Strawberries respond better to light, frequent applications than to heavy, less frequent waterings. Watering them during the day so they will have a chance to dry before night helps keep down disease.

The depth to irrigate depends partially upon the crop grown. Soil type is another factor involved in penetration, as mentioned previously. Strawberries are shallow-rooted and do not require the depth of water penetration that brambles do. On most soils if you can get moisture down 12 inches on strawberry fields and 24 inches on bramble plantings you will do a very satisfactory job.

A plant's peak rate of water use is another important consideration. Strawberries use soil moisture at the rate of about an inch of water per week while brambles will use around an inch and a half. During dry periods you try to supply this much water to these plants. If rains occur you simply make up the difference with irrigation.

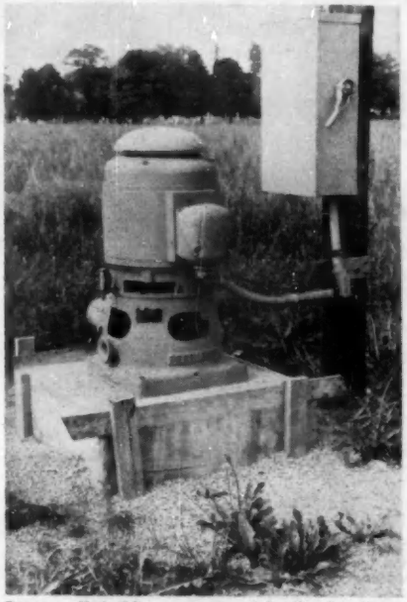
Large nozzles with big capacities are used to irrigate raspberries on Mumma Farms, Dayton, Ohio. Pipes are not moved until put away in fall.

What About Fertilizing?

Water is not a substitute for soil fertility. In fact, if you expect to harvest really big yields of berries you may have to increase your fertilizer rates on irrigated plantings. Some find it practical to apply fertilizer in the irrigation water.

It is wise to cultivate as soon as dry enough after each watering. This prevents crusts and helps control weeds.

Irrigation is most successful when continued, as needed, through the entire growing season. Experience and experiments east of the Mississippi indicate that you can expect to not use your irrigation equipment in only one year out of 10. In three out of 10 years it will mean the difference between success and failure. In the remainder of the years irrigation will raise your income per acre considerably.



Deep well turbine pump on John Dowler farm, Ashville, Ohio. Two wells are used for irrigation, both driven around 60 feet deep into prehistoric river bed now filled with gravel. This Peerless pump delivers 500 gpm powered with a 40 hp electric motor. Dowler waters 2.6 acres at a time.

All in all, irrigation is a wise investment, especially for the berry grower. He is raising a high income per acre crop, and every dollar properly invested in irrigation usually means two extra dollars in his pocket. Why else would so many berry growers be turning to this practice? THE END

WEED CONTROL

For successful weed control with herbicides, keep the following factors in mind:

1) Read the label on the product and follow directions.

2) Adjust the sprayer so that it will put on the required amount.

3) Spray on a calm day and when the soil is moist.

4) Time herbicide applications so that weeds never will be allowed to "go-to-seed."

NO MORE DITCHES

(*Continued from page* 14)

"My experience," says Clark, "is that orchard sprinkling makes a substantial saving in cultural operation. Most of these estimated cultural savings are from not having to make ditches, use them, or work over them. Even such operations as picking and pruning are easier with no ditches."

ESTIMATED ORCHARD CULTURAL COSTS AND SAVINGS BY SPRINKLING CECIL CLARK ORCHARD, WAPATO, WASH.

	Estimated Cultural Costs per Acre		Savings per Acre By Sprinkling	
	Min.	Max.	Min.	Max.
Pruning	$ 50.00	$ 150.00	$ 1.50	$ 4.50
Brush	30.00	60.00	7.50	15.00
Spraying	30.00	240.00	1.80	14.80
Discing		20.00		10.00
Ditching	3.00	15.00	3.00	15.00
Irrigating	24.00	100.00	12.00	50.00
Thinning	10.00	200.00	.60	6.00
Propping		100.00		5.00
Fertilizing	4.00	20.00	1.00	5.00
Picking	60.00	240.00	1.80	7.20
Hauling out	10.00	40.00	1.50	6.00
Mowing		20.00		5.00
Depreciation of Equipment	6.00	40.00	1.50	10.00
Water Charge		50.00		10.00
TOTAL	$239.00	$1295.00	$32.20	$163.10
Average Estimated Cultural Cost per Acre—$767.			Average Saving by Sprinkling per Acre—$97.64.	

Clark has 99 acres of peaches, 40 acres of apples (mostly young trees), 50 acres of cherries, 20 of prunes, 1 acre of plums, 20 acres of 'cots, and 30 acres of pears.

"I even start young orchards with sprinklers," he said. "I use a post borer, dig holes from 10 to 18 inches deep, depending upon the tree roots, plant the trees in a mulch, and sprinkle often to keep them moist."

By the end of 1947, Mr. Clark had 260 acres under sprinklers. In 1947 he prepared a survey, querying some 400 users of sprinklers in and around Wenatchee and Yakima, and 201, representing 4,789½ acres of orchards sprinkled, returned the questionnaires.

Of these, 115 reported sprinkling peaches and 'cots, 98 peaches and pears, 98 pears, 68 cherries, and 32 plums and prunes. Only 5 per cent responded in the "unsatisfactory" column, and 62 per cent had no complaints at all about sprinkling. The survey showed that 82 had gravity systems, 113 pumps, and 23 had both. Under-trees systems totaled 157, overhead 14, but, of course, overhead is not so popular now.

Some of the results of the survey made by Mr. Clark in 1947, with the statistics applying equally well now as then, are as follows:

Sprinkling Versus Rill Irrigation

Comparison of Water Consumption — Figures showed an average saving of 24 per cent for 130 sprinkler users. Averaged over the 4,189 acres using less water, this means a saving of 4,020 acre-feet, allowing four acre-feet as the average water consumption under rill irrigation. Against this, only 4 growers reported extra usage of water by sprinkling, which added only 27 acre-feet. The net result is that the 182 fruit growers represented could irrigate about 1,000 acres more land with their water savings from sprinkling.

Comparison of Labor Consumption—Averages showed an estimated net saving of about 60,000 hours with sprinkler irrigation. In addition, further savings in cultural practices were indicated because of having no ditches.

Mr. Clark recently undertook a monstrous land leveling program in a tortured strip of hillside which he owns. The strip had eight gullies 30 to 40 feet deep crossing it. Bulldozers leveled the land. Young trees were planted. Orchard sprinklers were installed. The land which he reclaimed was worthless, and contains no humus. The 10 acres were planted with cherries and peach filler in the top one-third and Moorpark 'cots with a new type of peach tree for filler in the bottom two-thirds. Within 10 years, with careful mulching, irrigating and fertilizing, Mr. Clark expects to have first-rate producing orchard.

THE END

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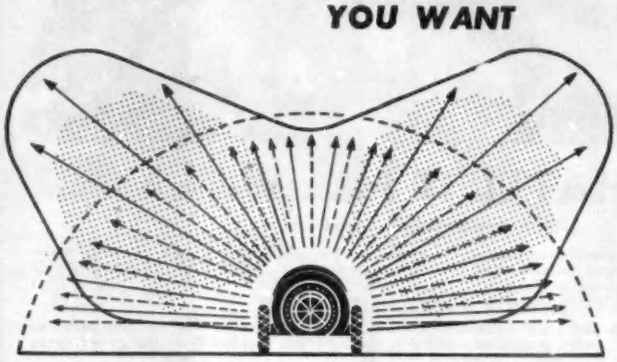

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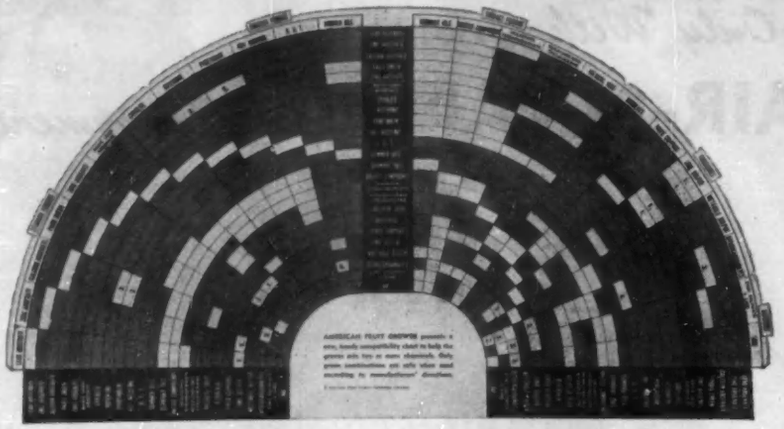

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which tells at a glance just what materials will mix safely. Printed in three colors, mounted on Bristol board paper, it is an accurate guide in the safe and successful mixing of all spray chemicals.

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From where I sit ... *by* Joe Marsh

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Duke had ribbons and streamers ... gave away balloons to the kids, corsages to the ladies, and car gadgets to the men.

But the finishing touch was put on by Duke's helpers, Lefty and Mush. Most of us had never seen them wearing anything but coveralls—but that night they were out pumping gas and wiping windshields *in tuxedos!*

From where I sit, Duke's typical of the type of fellow who's always eager to try all the latest methods. Others of us (like me, for instance) are more conservative ... prefer to stick with the "tried and true." Just a case of preference, I guess. Like the way you may enjoy coffee with meals while I prefer a cold glass of beer. No sense in making a *spectacle* of ourselves by claiming ours is the only choice.

Joe Marsh

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NEW FOR YOU

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With concentrate spraying playing a bigger part in orchard work, it is doubly important to keep spray nozzles clean and free-flowing. Time and money are wasted too often cleaning clogged nozzles. Growers in southern Illinois have found that the new Spray Rig Filter is saving spray dollars. Strongly made and easily cleaned, it will fit your present rig. For full particulars, write the Central Mine Supply Co., 218 S. Third St., Mt. Vernon, Ill.

When To Irrigate

Knowing when to irrigate and how much water to put on is the secret to profitable irrigation. The only sure way to know is with an instrument that accurately measures soil moisture. One that western growers are using successfully is Model 101 Irrigage. This handy instrument is priced within the reach of all growers. Just write Dick Raymond at Rayturn Machine Corp., 8200 S. E. 7th Ave., Portland 2, Ore.

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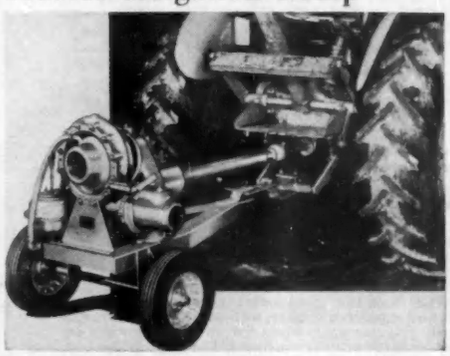
North Carolina's peach growers found they were destroying valuable irrigation pipe dragging it from row to row. Labor also was proving costly. They asked Jim Kellam, master machinist, to develop a simple, useful carrier. The result is the inexpensive Kellam Karrier, with which one man can carry four 20-foot lengths of 5-foot pipe. Write Jim Kellam, Biscoe Foundry & Machine Co., Biscoe, N.C.

Tractor Irrigation Pump



Let your tractor run your pump and make your irrigation pumping job simple and cheap. A new pump designed and built by the famous Gorman-Rupp Company is driven by the tractor power take-off. This new unit delivers 500 gpm at 100 pounds pressure. Get details by writing Ian Seeds, Jr., Gorman-Rupp Company, 305 Bowman St., Mansfield, Ohio.

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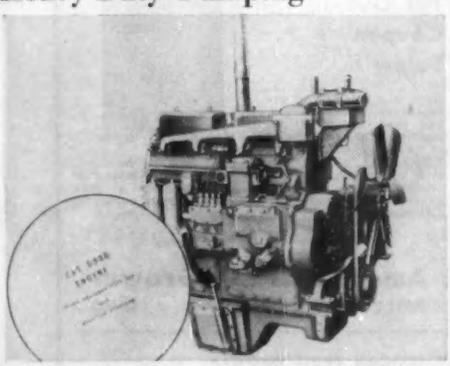

Several growers we know are using Caterpillar diesels on their big irrigation pumps. They report that the "Cat" diesel is cheap to operate and almost never needs attention. For latest information on the new Caterpillar diesels, write Bud Farischon, Caterpillar Tractor Co., Peoria 8, Ill.

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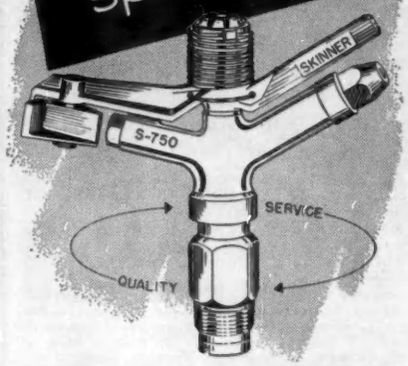

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WINES: MAKE YOUR OWN FROM GRAPES, raisins, berries. No special equipment needed. Printed directions, 25¢ coin. TIMBERLAKE ENTERPRISE, Box 1401, Denver 1, Colorado.

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500 GUMMED STICKERS NEATLY PRINTed with your name and address 65¢ postpaid! Handy for envelopes and scores of uses. (Trial 150—35¢). ARTPRINT, Box 166, Sheboygan 11, Wisconsin.

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PROGRESS IN HORTICULTURAL RESEARCH

SHOWN above is a group of graduate students in horticulture enrolled at Rutgers University, and typical of similar groups enrolled in colleges and universities throughout the country. These are the men and women who have decided to make horticultural research and instruction their life work. After completing requirements for their degrees, they will go into teaching and research in state, federal, and industry jobs.

Opportunities in horticulture were never better. A shortage of undergraduate and graduate students in pomology and vegetable crops has left many graduate assistantships, fellowships, and scholarships open.

The low horticultural enrollment situation at many of our colleges and universities means a shortage for some years to come.

Most of the younger generation of fruit growers are college graduates, and they will attest to the importance of their college training. If you know of a likely lad in your neighborhood, encourage him to enter horticulture and at the same time take more than a passing interest in your department of horticulture at your state university. Through those hallowed halls will march countless generations of fruit growers as well as research workers and teachers, to keep the fruit industry modern, progressive, and up-to-date.

BOOK REVIEWS

● **Cherries and Cherry Products** by Roy E. Marshall. ($8.50. Interscience Publishers, Inc.) Dr. Marshall, who is with Michigan State College, has spent many years in the heart of the cherry country and is well qualified to write on this popular fruit. While comparatively small in number of pages (297), the book nevertheless covers in digest form every aspect of the cherry, including its origin, fruit development and structure, major cultural problems, chemical and physiological changes within the fruit as it ripens, and the handling and processing of the fruit. Preservation by canning and freezing, brine cherries and other products, cherry juice, and dehydration of cherries are covered in a half dozen of the 17 chapters.

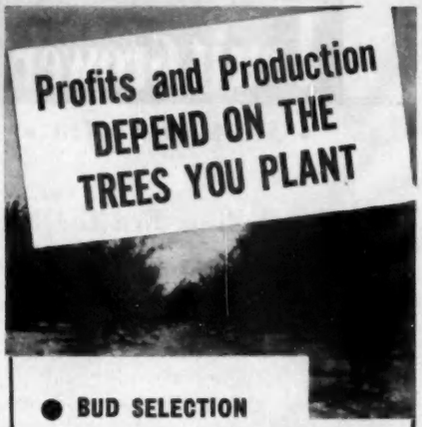
Book orders, with check or money order, may be sent to AMERICAN FRUIT GROWER, Willoughby, Ohio.

● **Practical Horticulture** by James S. Shoemaker and Benjamin J. E. Teskey. ($4.20. John Wiley & Sons, Inc.) Prof. Shoemaker needs no introduction to readers who have his volume on *Small Fruit Culture* or on *General Horticulture*. Both authors are with the Ontario Agricultural College at Guelph.

Practical Horticulture is for the student and gardener who wants a practical and easy-to-follow reference and guide to the how, what, and why of horticultural operations. Each crop or group of closely associated crops—ornamental trees, shrubs, and vines; flowers; vegetables; and tree and small fruits—is dealt with specifically in the 28 illustrated chapters. Information is given on varieties, propagation, planting, pruning, weed and pest control, harvesting, storage, and general cultural operations.

● **Small-Fruit Culture** by James S. Shoemaker. (New Third Edition. $6.50. McGraw-Hill Book Company, Inc.) The culture of grapes, strawberries, bramble fruits, currants and gooseberries, blueberries, and cranberries is covered. Some of the new features in the new edition include discussions of improved cultural practices, the newer varieties, modern pest control measures, greatly enlarged information on irrigation, chemical weed control, new viewpoints on hardiness and winter injury, mechanical pickers for bramble fruits, latest developments in the expanding blueberry industry.

● **The History of Applejack** by Harry B. Weiss. (Paper bound, $4.00; cloth bound $5.00. New Jersey Agricultural Society.) This interesting book tells about the time when cider making was supposed to be the most difficult part of the business of the orchardist. An insight is given into the reasons for the spread of apple growing following colonization of America when settlers highly prized "cyder" as a healthful drink.



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American Fruit Grower

• Fruit for Health •

RICHARD T. MEISTER, *Editor*
H. B. TUKEY, *Associate Editor*

A New Era for Management and Labor

THE Pulitzer prize editorial of 1954 was awarded to the *Detroit Free Press*. It dealt with a wildcat strike in the automotive industry that did everybody harm and nobody good. It told of the small irritation of one worker which grew and grew until thousands of persons were involved and out of work. And all for what? The situation was likened to the loss of a horseshoe nail and the consequent loss of a kingdom.

The editorial was good, but even more important is the fact that it was so well received by the public and by labor and management alike. The snarling and the biting and the name calling aroused little sympathy. The inability of labor and management to get along together was condemned by people in general.

It all indicates that we are becoming increasingly conscious of individual responsibility to each other and to our business, our industry, and our society in general.

A few years ago there was a disastrous strike in California involving handlers and processors. Everybody suffered—the worker, the ranch owner, the hired help, the canner, and all those dependent upon the earnings of so important a group. At that time AMERICAN FRUIT GROWER called out editorially for the end to such warfare, and the editorial was warmly received.

Again we are entering an era of readjustment and change. There will be hirings and demands and negotiations and give-and-take. There will be misunderstandings and every opportunity for unreason, anger, wounded pride, and trouble.

Now is a good time, before the full harvest season, for fruit growers and fruit communities to look around and to appraise the situation. Are there enough workers? Are living conditions what they should be? Are social outlets provided? Are health and accident hazards removed? Is there going to be contentment? Are there committees set up to handle emergencies? Are there measures being taken to ward off the possibilities of emergencies?

Now is a good time to assess the situation and to agree to meet it by calmness, reasonableness, and a spirit of sitting around the table and talking things over.

Yes, we are rapidly entering an era so aptly described by the Pulitzer prize-winning editorial, which pointed out the futility of one segment working against the other. We are all in this thing together—including the general public. And the professional troublemakers will find increasingly less sympathy and support. There is no problem which well-intentioned, honest men cannot settle in coolness and fairness to everyone concerned.

Protect What You Have

WE have already sent our sympathy to those who have lost a fruit crop this season. Perhaps it is now appropriate to say a word or two to those who are so fortunate as to have a crop.

First, take care of what you have. A skimpy or a poorly timed spray may cost you money. Watch carefully over what you have—there is many a slip twixt the cup and the lip.

Second, get ready for the harvest and the market. Watch that the price does not get too high and at the same time watch that the price is all that it should be.

Third, treat the customer right. A small crop year can be a year to lose friends or a year to make friends. Next year you may need all the friends you can find.

Fruit Talk

On the tropical island of **Curacao,** large numbers of male **screw-worm flies** were sterilized by using **radioactive cobalt,** then released at the rate of 400 per square mile per week during the mating season, with the result that female flies produced only infertile eggs and the fly population was almost completely wiped out.

A most interesting publication is from the pen of **Dr. Lief Verner** of the **University of Idaho** (Research Bulletin No. 28) showing how hormones are related to growth habit and angle of branching in fruit trees and how this knowledge can help in tree training.

Slick Airways, Inc., is establishing a **"truck-air-truck system"** for vine-ripened fruits and vegetables which will pick up produce by truck in one part of the country, haul it to the airport, transport it to a given city, and meet and deliver it by truck to the consignee.

Dr. G. L. Flack of **Liverpool University** is conducting an experiment with 200 young children under 5 years of age to determine the effects of apples on their teeth. Each child will be given an apple a day after meals.

Fruit growers have had decades of experience with the **spray residue** problem. Now some other segments of agriculture are learning about the problem, including grain dealers with mercury-treated seed wheat which found its way into food channels, and a Minnesota poultry raiser who fed his 75,000-hen flock with corn and crippled production.

Frost protection with **sprinkler irrigation** has worked so well on strawberries (with protection at 20° F.) in some areas that the practice is being extended to other high value, low growing crops.

Says **Max Smith** of **Millburg, Mich.,** one of the first to adopt hydrocooling of peaches, "If you hydrocool and then carefully maintain that temperature or reduce it to 36° you will have arrested all rot spores and they will not begin to develop until after your shipment has reached its destination and is placed in normal retail temperature rooms."

Lew Field must have had the **dual-purpose variety** in mind when he wrote:

He may catch Thee
And may catch He,
But he'll never catch Me
Walking down a
ONE WAY STREET!

Maleic hydrazide at 2,000 to 3,000 ppm, when apple shoots were 6 to 8 inches long, stopped their growth for several weeks and made them less susceptible to fire blight in Pennsylvania.

Dalapon has proved very effective in controlling growth of grass around the trunk of fruit trees.

H.B.T.

Coming Next Month

- Annual Directory Issue and Buyer's Guide
- Ideas for Efficient Fruit Handling
- Wire Props for Peach Trees
- The Problem of Peach Maturity

Watch heads turn as you glide proudly down the street in your new Chevrolet. Hear its husky hum of power out on the highway. It's no wonder Chevrolet is stealing the thunder from the high-priced cars! Name it, and Chevrolet has it:

Power? Plenty, in the 162-h.p. "Turbo-Fire V8" (180-h.p. is optional at extra cost) or in two new "Blue-Flame" 6's! Plus Powerglide, Overdrive (extra-cost options), or new Synchro-Mesh transmission. A choice of *six* exciting power-drive combinations! . . . **Ride?** Let a demonstration drive describe *real* handling ease. New front and rear suspension, new High-Level ventilation, tubeless tires (at no extra cost) are only a few of its luxury-car features. . . . **Options?** The works! Power Steering, Power Brakes, even Air Conditioning on V8 models. . . . **Styling?** Fresh and functional, free from that "overdone" look!

Call your Chevrolet dealer for details and a demonstration. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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The cover spray that's "tops" for total clean fruit

You can simplify your vital summer spray program by using effective, economical Black Leaf 253 to replace complicated, expensive insect-control materials. With Black Leaf 253 you stop the bugs, you save on labor and materials, and you get the ideal insect control that turns out more clean, high-quality fruit.

Black Leaf 253 kills codling moth, green and rosy aphids, red-banded leaf roller, leafhoppers, European red mite, two-spotted mite, pear psylla, San Jose scale and many other pests. Leading growers in major areas find that Black Leaf 253 tops other spray programs consistently in total clean fruit at harvest.

Dustless Black Leaf 253 is *Tobacco Base* impregnated with 25% of DDT and 3% of Parathion by an exclusive process. It is compatible with all other spray materials recommended with DDT and Parathion. It is easy to use—just dump Black Leaf 253 in the water as the spray tank refills.

Cuts residue problems. Black Leaf 253 provides long-lasting insect control with essentially no visible residue. Permits development of high-quality color and finish.

Start now to increase your profits by using economical, effective Black Leaf 253. Buy it from your spray dealer or write for full information. Look for the Black Leaf on the red and white package.

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Black Leaf 40®	TEPP 40%
Black Leaf 155	TEPP 20%
Chlordane Wettable	

Many other pest control products also carry the reliable Black Leaf label—insecticides, fungicides, weedicides and rodenticides. Ask for full information.

*T. M. of U. S. Rubber Co.

The LEAF that protects the tree is a "Black Leaf" SPRAY